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# MICHAEL R. ROSEN

## Curriculum Vitae

**Professional Address:** Michael R. Rosen, M.D.  
Gustavus A. Pfeiffer Professor of Pharmacology  
Professor of Pediatrics  
Director, Center for Molecular Therapeutics  
College of Physicians and Surgeons of Columbia University  
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**Home Address:** 25 East 86 Street, Apartment 14C  
New York, N.Y. 10028

**Birthdate and Place:** October 8, 1938  
New York, New York

**Marital Status:** Married

## Education

Wesleyan University, B.A., 1960

State University of New York, Downstate Medical Center, M.D., 1964

Medical Licensure - New York, 1965

## Traineeship

Internship (mixed) Medicine and Surgery - Montefiore Hospital, July 1964 - June 1965

Resident in Medicine - Montefiore Hospital, July 1965 - July 1966, August 1968 - June 1969

Resident in Cardiology - Montefiore Hospital, July 1969 - June 1970

Postdoctoral Fellow - Department of Pharmacology, College of Physicians and Surgeons of Columbia University, July 1970 - June 1972

### **Academic Appointments**

Assistant Instructor of Medicine - Albert Einstein College of Medicine, Bronx, New York, July 1969 - June 1970

Associate, Department of Pharmacology, College of Physicians and Surgeons of Columbia University, New York, New York, July 1972 - 1973

Assistant Professor of Pharmacology, College of Physicians and Surgeons of Columbia University, New York, New York, July 1973 - 1975

Assistant Professor of Pharmacology and Pediatrics, College of Physicians and Surgeons of Columbia University, New York, New York, July 1975 - 1976

Associate Professor of Pharmacology and Pediatrics, College of Physicians and Surgeons of Columbia University, New York, New York, July 1976 - 1981

Professor of Pharmacology and Pediatrics, College of Physicians and Surgeons of Columbia University, New York, New York, July 1981 -

Head, Division of Developmental Pharmacology, 1981 -

Gustavus A. Pfeiffer Professor of Pharmacology, Columbia University, New York, New York, July 1991 -

Professor of Basic Medicine: Moscow-State University, Moscow, Russia, 1993-1998

Director, Center for Molecular Therapeutics, 2000 -

Adjunct Professor of Physiology and Biophysics, SUNY Stony Brook, 2000 -

### **Hospital Appointments**

Internist, Department of Internal Medicine, USAF Hospital, Beale AFB, California, August 1966 - August 1968

Assistant Visiting Physician, Division of Cardiology, Harlem Hospital, New York, New York, July 1972 -

Assistant Physician, Presbyterian Hospital, New York, New York, July 1975 - 1976

Associate Attending Physician, Presbyterian Hospital, New York, July 1976 - 1981

Attending Pediatrician in Pediatric Service, Presbyterian Hospital, New York, NY, July 1981 - 2002

### **Columbia University Committees:**

Pharmacology Executive Committee, 1976-

Head, Biosafety Committee, 1986-1989

Institutional Safety Committee, 1986 - 1989

Faculty Council, 1987 - 1992

Executive Committee of Faculty Council, 1988 - 1992

Committee on Appointments and Promotions, 1987 - 1990

Chairman, Committee on Appointments and Promotions; 1989 - 1990

Standing Committee on the Conduct of Science; 1990-1991

Member and/or Chairman, Ad Hoc Committees on Departmental Review, on Tenured Appointments and on Institutional Search Committees

Member, Columbia University Senate; 1992 - 1997

Member, Columbia University Education Committee; 1992 - 1997

Member, Columbia University Executive Committee; 1995 - 1997

### **Qualification**

Diplomate, American Board of Internal Medicine, 1971

### **Military Service**

USAF, Beale AFB, California, 1966 - 1968

### **Grants**

New York Tuberculosis and Health Association Grant for evaluation of epidemiology of tuberculosis in Ibadan, Nigeria, 1963

State University of New York, Downstate Medical Center, Grant for evaluation of epidemiology of tuberculosis in Ibadan, Nigeria, 1963

Senior Investigator, New York Heart Association, 1972 - 1975

**Grants continued:**

Research Fellow, John Polachek Foundation, July 1973 - June 1974

Pediatric Cardiac Electrophysiology and Pharmacology (NHLBI Grant HL-17766), February 1975 - 1977

Electrophysiology and Pharmacology of Pediatric Cardiac Arrhythmias and Sudden Death (Irma T. Hirschl Trust), 1975 - 1979

New York Heart Association Research Grant, 1975 - 1977

Principal Investigator, Mission VII of NHLBI Grant HL-12738, Physiologic Pharmacology and its Clinical Applications, 1977 - 1983

Principal Investigator, New York Heart Grant "Heart and Nerve Cell Cultures: Physiology and Arrhythmias," 1978 - 1980

Principal Investigator, USPHS-NHLBI Grant HL-23358 "Age-related changes in cardiac autonomic interactions," 1979 - 1983

Participating Laboratory, New York Heart Association, 1977 - 1981

Principal Investigator, USPHS-NHLBI Grant HL-28223, "Triggered activity and cardiac arrhythmias," 1982 - 1990

Principal Investigator, USPHS-NHLBI Program Project Grant: HL-28958; "Developmental Approach to Cardiac Rhythms and Arrhythmias," 1983 -

Co-principal Investigator, USPHS-NHLBI Program Project Grant: HL-33727; "Lethal Arrhythmias: Mechanisms and Prevention," 1985 - 1989

Principal Investigator, Glaxo Cardiovascular Discovery Grant: "New Therapeutic Approaches to Neurally-Modulated Arrhythmias," 1989 - 1992

Principal Investigator, USPHS-NHLBI Grant: HL-43731; "Neurohumors, Arrhythmias and Diagnosis," 1990 - 1997

Principal Investigator, USPHS-NHLBI Training Grant: HL-07271; "Cardiac Arrhythmias: Mechanisms and Treatment," 1992 - 2001

Principal Investigator, Helopharm: Electrophysiology laboratory: 1993 -1998

Principal Investigator, Grant from Procter and Gamble: "The acute effects of gonadal steroids (estrogen and progesterone) on the electrophysiological properties of cardiac tissues," 1995-1999

Principal Investigator, Grant from the Wild Wings Foundation: "Project on Sudden Death," 1996 -1999; Bawd Foundation 1999-2000

### **Grants continued:**

Principal Investigator, USPHS-NHLBI Grant HL-53956; "Electrical Remodeling, Repolarization & Antiarrhythmics," 1997 - 2001

Co-Principal Investigator (with Ofer Binah, PhD, Technion, Haifa), US-Israel Binational Science Foundation; "Remodeling of gap junctions by activation patterns in cultured ventricular myocytes," 2000 - 2003

Principal Investigator, USPHS-NHLBI Grant HL-67449; "Atrial fibrillation: Mechanisms and Prevention," 2000 - 2004

Principal Investigator, USPHS-NHLBI Grant HL-67101; "Memory, Remodeling and Ventricular Arrhythmias," 2001 - 2006

### **Honors (Selected)**

Alpha Omega Alpha, 1963

Fellow, American College of Physicians, 1973

Fellow, American College of Clinical Pharmacology, 1975

Fellow, American College of Cardiology, 1975

Honorary Regent for Life: American College of Clinical Pharmacology, 1985 -

Distinguished Alumnus Award: Polytechnic Preparatory C.D. School, 1991

Award of Merit: American Heart Association, 1992

Samuel Seifter, Ph.D. Award: Master Teacher in the Basic Sciences, SUNY Downstate Medical Center, 1994

Plenary Lecturer, British Cardiac Society, 1997

Fellow, European Society of Cardiology, 1999

Chairman's Award: American Heart Association, 2000

Founding Fellow, International Society for Heart Research, 2001

Fellow, American Heart Association, 2001

Einthoven Award; The Einthoven Foundation; Leiden, The Netherlands, 2002

### **Societies**

American Federation for Clinical Research

American Association for the Advancement of Science

New York Academy of Sciences

American Society for Clinical Pharmacology and Therapeutics

New York Heart Association

American Society for Pharmacology and Therapeutics

American Geriatrics Society

Cardiac Muscle Society

International Society for Heart Research

American College of Clinical Pharmacology

American Heart Association

Cardiac Electrophysiology Society

## **Other Professional Activities**

### **Editorial Positions:**

Associate Editor, *Circulation Research*; July 1975 - June 1981

Member, Editorial Board, *Journal of Clinical Pharmacology*; 1981 - 1984

Member, Editorial Board, *Circulation*; 1983 -

Member, Editorial Board, *Journal of Molecular and Cellular Cardiology*; 1986-1989; 1994 - 1999

Associate Editor: *Journal of Molecular and Cellular Cardiology*; 1989 - 1993

Member, Editorial Board, *Journal of Cardiovascular Electrophysiology*; 1990 -

Member, Editorial Board, *European Journal of Pharmacology*; 1990 - 1996

Member, Editorial Board, *Journal of Cardiovascular Pharmacology*; 1991 - 1994

Consulting Editor: *Cardiovascular Research*; 1992 -

Member, Editorial Board, *Circulation Research*; 1993 - 1998

Specific Field Editor: *Journal of Pharmacology and Experimental Therapeutics*; 1993 - 1994

Editor-in Chief (with Paul Vanhoutte, M.D., Ph.D.): *Journal of Cardiovascular Pharmacology*; 1994 -

Consulting Editor: *Circulation Research*; 1998 -

### **Course and Meeting Directorships:**

Rosen MR, Wit AL; Course Directors: Reentrant Arrhythmias: Mechanisms, Diagnosis, Treatment; sponsored by Columbia University; November 5-7, 1973

Rosen MR, Wit AL; Course Directors: Cardioactive Drugs: Mechanisms, Pharmacokinetics and Clinical Applications: Sponsored by Columbia University and the American Heart Association; June 4-6, 1975

Rosen MR; Course Director: Selected Topics in Pharmacotherapy; presented at South Nassau Community Hospital; April-June, 1975

Rosen MR; Director: Pharmacology Journal Club: 1976 -

Rosen M, Palti Y; Co-Directors: Rappaport Institute Symposium on Lethal Arrhythmias Resulting from Myocardial Ischemia and Infarction. Haifa, Israel; March 1988

**Other Professional Activities continued:**

**Course and Meeting Directorships continued:**

Rosen M; Janse M; Wit A; Co-Directors: The Hoffman Symposium; Islamorada, Florida; 1990

Rosen M, Schwartz P, Janse M; Directors: Sicilian Gambit Meeting, Taormina, Sicily, 1990

Rosen M, Schwartz P, Levy S; Directors: Sicilian Gambit Meeting, Harrison, NY, October, 1993

Rosen M, Kléber A, Camm J, Janse M, Schwartz P; Directors: Sicilian Gambit Meeting, Harrison, NY, October, 1996

Rosen M; Director: Prevention of Atrial Fibrillation, Ile de Porquerolles, September, 1999

Rosen M; Director: Sicilian Gambit Meeting, Chatham, MA, October, 2000.

**Honorary Professorships and Lectureships (Selected):**

Visiting Professor: The Rappaport Institute, Technion-Israel Institute of Technology; June-August, 1984

Honorary Member: Argentine Association of Cardiac Pharmacology; 1985 -

Visiting Professor: University of Limburg, Maastricht, The Netherlands; June 1985

Abraham Jezer Memorial Lecturer: Montefiore Hospital, New York; 1985

David Littman Memorial Lecturer: Harvard School of Medicine; May 1986

William N. Creasy Visiting Professor of Clinical Pharmacology (Burroughs-Wellcome Fund): Wayne State University; April 1988

Visiting Professor, Cardiovascular Research Institute: University of California at San Francisco; May 1988

David Scherf Memorial Lecturer: Lenox Hill Hospital, New York; September 1988

Visiting Professor: University of Limburg, Maastricht, The Netherlands; October 1989

Sterling Lecturer: SUNY, Syracuse, March 1991

Gordon Moe Memorial Lecturer: New York Heart Association, September 1992

Visiting Lecturer: SUNY, Stony Brook, Cardiovascular Institute, February 1995

Plenary Lecturer: British Cardiac Society, 1997



**Other Professional Activities continued:**

**Honorary Professorships and Lectureships (Selected):**

Ziegler Lecturer: Rappaport Institute, Technion, October 2000

Israel Pollack Distinguished Lecture Series, Technion, October 2001

Chandler McC. Brooks Seminar: SUNY Health Science Center at Brooklyn, May 2002

International Lectureship, The Rayne Institute, London, UK, May 2002

The Einthoven Lecture: Leiden, The Netherlands, June 2002

Landmark Lecture, International Society of Heart Research, Madison, WI, 2002

Distinguished Visiting Professor: Heart and Vascular Center, Case Western Reserve University, Cleveland, OH, December 2002

**National Heart, Lung and Blood Institute:**

Ad hoc Consultant; 1975 - 1977

Member, Cardiovascular and Pulmonary Study Section; 1977 - 1981

Member, Research Review Committee A; 1988 - 1992

Member, Joint NHLBI-Russian Ministry of Health Exchange Program in Sudden Cardiac Death; 1989 - 1998

Member, NIH Reviewers Reserve; 1992

Member, Cardiovascular B Study Section, 1994 - 1998

Member, Cardiotoxicity Expert Working Group of the Nonclinical Studies Subcommittee of the Advisory Committee for Pharmaceutical Science, US Food and Drug Administration, 2001 -

Fellow, Council on Circulation, 1978 -

Fellow, Council on Basic Science, 1985 -

Member, Scientific Sessions Program Committee, 1982 - 1991

Member, Executive Committee, Council on Basic Sciences, 1985 - 1987, 1992 -

Chairman, Program Committee, Council on Basic Sciences; 1985 - 1987

Vice Chairman, Scientific Program Committee, 1986, 1988

**Other Professional Activities continued:**

**American Heart Association:**

Chairman, Scientific Program Committee, 1988 - 1991

Member, Board of Directors; 1988 - 1991

Chairman, Task Force on Strategies to Increase Federal Funding of Research; 1990

Vice Chairman, Council on Basic Science; 1992 - 1994

Chairman, Basic Science Council Membership Committee; 1992 - 1994

Chairman, Basic Science Council Long Range Planning Committee; 1992 - 1994

Chairman, Basic Science Council Budget Committee; 1992 - 1994

Chairman-elect, Council on Basic Science; 1993 - 1994

Chairman, Council on Basic Science; 1994 - 1996

Chairman, Council on Basic Science Nominating Committee; 1996 - 1998

Chairman, Research Review Committee, Northeast 5A; 1998 -1999

**New York Heart Association:**

Member, Council on Professional Education; 1978 - 1981

Member, Board of Trustees; 1991 - 1996

Member, Executive Committee; 1991 - 1993

Chairman, Task Force on Membership; 1991 - 1992

Member, Government Affairs Committee; 1993 - 1997

**American College of Cardiology:**

Member, Joint American College of Cardiology/American Heart Association  
Advisory Committee on Cardiovascular Drugs; 1979 - 1985

Member, Publications Committee; 1982 - 1987

Scientific Sessions Program Committee; 1983 - 1986

**Other Professional Activities continued:**

American College of Clinical Pharmacology:

Member, Board of Regents, 1978 - 1982

President, 1982 - 1984

Honorary Regent for Life: 1985 -

Cardiac Electrophysiologic Society:

Secretary-Treasurer, 1980 - 1981

President, 1981 - 1982

**Miscellaneous Activities:**

Consultant for "Understanding Electrocardiography" by M.B. Conover, C.V.  
Mosby, St. Louis; 1980

Affiliate Member, Oklahoma Medical Research Foundation; 1984 - 1989

Consultant, Krannert Institute of Cardiology; 1987 - 1990, 1995 -

Consultant: Farmitalia, Carlo Erba; 1987 - 1989

Member, United States Pharmacopeial Advisory Panel on Cardiovascular and Renal  
Drugs; 1990 - 1995

Member, Scientific Advisory Committee of the Rappaport Institute, Haifa, Israel;  
1991 -

Member, Scientific Advisory Committee for the Ad Hoc Group for Medical Research  
Funding; 1991 -

Advisory Board: Genentech Access Excellence; 1993 - 1996

## **PUBLICATIONS**

### **ORIGINAL ARTICLES**

1. Rosen M, Lisak R, Rubin I: Diphenylhydantoin in cardiac arrhythmias. *Amer J Cardiol* 20:674-678, 1967.
2. Rosen M, Gelband H, Hoffman BF: Effects of phentolamine on electrophysiologic properties of isolated canine Purkinje fibers. *J Pharmacol Exp Ther* 179:586-593, 1971.
3. Gelband H, Bush H, Rosen M, Myerburg R, Hoffman BF: Electrophysiologic properties of isolated preparations of human atrial myocardium. *Circ Res* 30:293-300, 1972.
4. Rosen M, Gelband H, Hoffman BF: Effects of blood perfusion on electrophysiologic properties of isolated canine Purkinje fibers. *Circ Res* 30:575-588, 1972.
5. Rosen M, Gelband H, Hoffman BF: Canine electrocardiographic and cardiac electrophysiologic changes induced by procaine amide. *Circulation* 46:528-536, 1972.
6. Rosen MR, Gelband H, Hoffman BF: Correlation between effects of ouabain on the canine ECG and transmembrane potentials of isolated Purkinje fibers. *Circulation* 47:65-71, 1973.
7. Rosen M, Gelband H, Merker C, Hoffman BF: Mechanisms of digitalis toxicity: Effects of ouabain on phase four of Purkinje fiber transmembrane potentials. *Circulation* 47:681-689, 1973.
8. Rosen M, Merker C, Gelband H, Hoffman BF: Effects of procaine amide on the electrophysiologic properties of the canine ventricular conducting system. *J Pharmacol Exp Ther* 185:438-446, 1973.
9. Rosen M, Gelband H: Effects of ouabain on canine Purkinje fibers in situ and perfused with blood. *J Pharmacol Exp Ther* 186:336-372, 1973.
10. Rosen M, Ilvento J, Gelband H, Merker C: Effects of verapamil on electrophysiologic properties of canine cardiac Purkinje fibers. *J Pharmacol Exp Ther* 189:414-423, 1974.
11. Rosen M, Miura D, Danilo P: Effects of dimethyl quaternary propranolol on electrophysiological properties of canine cardiac Purkinje fibers. *J Pharmacol Exp Ther* 193:209-217, 1975.
12. Rosen MR, Hordof A, Hodess A, Verosky M, Vulliemoz Y: Effects of ouabain on electrophysiologic properties of neonatal, young and adult canine cardiac Purkinje fibers. *J Pharmacol Exp Ther* 194:255-263, 1975.

**Original Articles continued:**

13. Glicklich JE, Gaffney R, Rosen MR, Hoffman BF: Effects of AY-22, 241 (Actodigin) on electrical and mechanical activity of cardiac tissues. *Eur J Pharmacol* 32:1-9, 1975.
14. Rosen MR, Merker C, Pippenger CE: The effects of lidocaine on the canine ECG and electrophysiologic properties of Purkinje fibers. *Am Heart J* 91:191-202, 1976.
15. Rosen MR, Danilo P, Alonso MB, Pippenger CE: Effects of therapeutic concentrations of diphenylhydantoin on transmembrane potentials of normal and depressed Purkinje fibers. *J Pharmacol Exp Ther* 197:594-604, 1976.
16. Hordof AJ, Edie R, Malm J, Hoffman BF, Rosen MR: Electrophysiologic properties and response to pharmacologic agents of fibers from diseased human atria. *Circulation* 54:774-779, 1976.
17. Levy JA, Weiss RM, Dirksen ER, Rosen MR: Possible communication between murine macrophages oriented in linear tissue culture. *Exp Cell Research* 103:375-385, 1977.
18. Danilo P, Hordof A, Rosen MR: Effects of disopyramide on electrophysiological properties of canine cardiac Purkinje fibers. *J Pharmacol Exp Ther* 201:701-710, 1977.
19. Rosen MR, Hordof AJ, Ilvento J, Danilo P: Effects of adrenergic amines on electrophysiologic properties and automaticity of neonatal and adult canine cardiac Purkinje fibers. *Circ Res* 40:390-400, 1977.
20. Miura DS, Hoffman BF, Rosen MR: The effect of extracellular potassium on the intracellular potassium ion activity and transmembrane potentials of beating canine cardiac Purkinje fibers. *J Gen Physiol* 69:463-495, 1977.
21. Danilo P, Langan W, Rosen M, Hoffman B: Effects of the phenothiazine analog, EN-313 on ventricular arrhythmias in the dog. *Eur J Pharmacol* 45:127-139, 1977.
22. Gelband H, Rosen MR, Myerburg R, Bush H, Bassett A, Hoffman BF: Restorative effect of epinephrine on the electrophysiologic properties of depressed human atrial tissue. *J Electrocardiol* 10:313-320, 1977.
23. Weiss RM, Vulliemoz Y, Verosky M, Rosen MR, Triner L: Adenylate cyclase and phosphodiesterase activity in rabbit ureter. *Invest Urology* 15:15-18, 1977.
24. Mary-Rabine L, Hordof A, Bowman FO, Malm JR, Rosen MR: Alpha and  $\beta$ -adrenergic effects on human atrial specialized conducting fibers. *Circulation* 57:84-90, 1978.
25. Hordof A, Spotnitz A, Mary-Rabine L, Edie R, Rosen MR: The cellular electrophysiologic effects of digitalis on human atrial fibers. *Circulation* 57:223-229, 1978.

**Original Articles continued:**

26. Mary-Rabine L, Rosen MR: Lidocaine effects on action potentials of Purkinje fibers from neonatal and adult dog. *J Pharmacol Exp Ther* 205:204-211, 1978.
27. Danilo P, Vulliemoz Y, Verosky M, Rosen MR: Epinephrine-induced automaticity of canine cardiac Purkinje fibers and its relationship to the adenylate cyclase adenosine 3',5'-monophosphate system. *J Pharmacol Exp Ther* 205:175-182, 1978.
28. Rosenfeld J, Rosen MR, Hoffman BF: Pharmacologic and behavioral effects on arrhythmias that immediately follow abrupt coronary occlusion: a canine model of sudden coronary death. *Am J Cardiol* 41:1075-1082, 1978.
29. Rosen MR, Mary-Rabine L, Danilo P, Hordof AJ: Alpha and  $\beta$ -adrenergic effects on cardiac arrhythmias due to automaticity. In:  $\alpha$  Adrenergic Blockade: A New Era in Cardiovascular Medicine. E. Braunwald (ed.), Excerpta Medica/Elsevier, Princeton, 1978, pp. 179-189.
30. Rosen MR, Mary-Rabine L, Hordof AJ, Danilo P: Alpha and  $\beta$ -adrenergic effects on cardiac automaticity. In: Neural Mechanisms in Cardiac Arrhythmias. P.J. Schwartz, A.M. Brown, A. Malliani and A. Zanchetti (eds.), Raven Press, New York, 1978, pp. 365-375.
31. Danilo P, Rosen M, Hordof A: Effects of acetylcholine on the ventricular specialized conducting system of neonatal and adult dogs. *Circ Res* 43:777-784, 1978.
32. Rosen M, Reder R, Hordof A, Davies M, Danilo P: Age-related changes in Purkinje fiber action potentials of adult dogs. *Circ Res* 43:931-938, 1978.
33. Miura DS, Rosen MR: The effects of ouabain on the transmembrane potentials and intracellular potassium activity of canine cardiac Purkinje fibers. *Circ Res* 42:333-338, 1978.
34. Rosen T, Lin M, Spector S, Rosen M: Maternal, fetal and neonatal effects of chronic propranolol administration in the rat. *J Pharmacol Exp Ther* 208:118-122, 1979.
35. Mary-Rabine L, Hoffman BF, Rosen MR: Participation of slow inward current in the Purkinje fiber action potential. *Am J Physiol* 237(2):H204-H212, 1979.
36. Rosen MR, Hordof AJ, Reder RF, Danilo P Jr.: Age- and disease-related changes in cardiac electrophysiological properties. In: Cardiac arrhythmias, electrophysiology, diagnosis and management. O. Narula (ed.), Williams and Wilkins, Baltimore, 1979, pp. 32-39.
37. Rosen MR, Danilo P: Effects of tetrodotoxin, lidocaine, verapamil and AHR-2666 on ouabain-induced delayed afterdepolarizations in canine Purkinje fibers. *Circ Res* 46:117-124, 1980.

**Original Articles continued:**

38. Rosen MR, Fisch C, Hoffman BF, Danilo P, Lovelace DE, Knoebel SB: Can accelerated atrioventricular junctional escape rhythms be explained by delayed afterdepolarizations? *Am J Cardiol* 45:1272-1284, 1980.
39. Lau YH, Robinson RB, Rosen MR, Bilezikian JP: Subclassification of  $\beta$ -adrenergic receptors in cultured rat cardiac myoblasts and fibroblasts. *Circ Res* 47:41-48, 1980.
40. Reder RF, Danilo P, Rosen MR: Effects of Pirmenol HCl on electrophysiologic properties of cardiac Purkinje fibers. *Eur J Pharmacol* 61:321-333, 1980.
41. Mary-Rabine L, Hordof A, Danilo P, Malm J, Rosen M: Mechanisms for impulse initiation in isolated human atrial fibers. *Circ Res* 47:267-277, 1980.
42. Danilo P, Hordof A, Reder R, Rosen M: Effects of verapamil on electrophysiologic properties of blood-superfused cardiac Purkinje fibers. *J Pharmacol Exp Ther* 213:222-227, 1980.
43. Reder R, Miura D, Danilo P, Rosen M: The electrophysiological properties of normal neonatal and adult canine cardiac Purkinje fibers. *Circ Res* 48:658-668, 1981.
44. Rosen MR, Legato M, Weiss RM: Developmental changes in impulse conduction in the canine heart. *Am J Physiol* 240:H546-H554, 1981.
45. Levi R, Malm JR, Bowman FO, Rosen MR: The arrhythmogenic actions of histamine on human atrial fibers. *Circ Res* 49:545-550, 1981.
46. Dangman KH, Danilo P, Hordof AJ, Mary-Rabine L, Reder R, Rosen MR: Electrophysiologic characteristics of human ventricular and Purkinje fibers. *Circulation* 65:362-368, 1982.
47. Hordof AJ, Rose E, Danilo P, Jr., Rosen MR: Alpha and  $\beta$  adrenergic effects of epinephrine on ventricular pacemakers in dogs. *Am J Physiol* 242:H677-H682, 1982.
48. Ilvento J, Provet J, Danilo P, Rosen MR: Fast and slow idioventricular rhythms in the canine heart: A study of their mechanism using antiarrhythmic drugs and electrophysiologic testing. *Am J Cardiol* 49:1909-1916, 1982.
49. Rosen M, Bowman F, Mary-Rabine L: Atrial fibrillation: the relationship between cellular electrophysiologic and clinical data. In: *Atrial Fibrillation*. H. Kulbertus, B. Olsson, M. Schlepper (eds.), AB Hassle; Molndal, Sweden, 1982; pp. 62-69.
50. Hewett K, Vulliemoz Y, Rosen MR: Senescence-related changes in the responsiveness to ouabain of canine Purkinje fibers. *J Pharmacol Exp Ther* 223:153-156, 1982.
51. Gessman L, Danilo P, Rosen MR: An electrophysiologic study of the digoxin-quinidine interaction. *J Clin Pharmacol* 23:16-23, 1983.

**Original Articles continued:**

52. Mary-Rabine L, Albert A, Hordof A, Fenoglio J, Malm J, Rosen MR: The relationship of human atrial cellular electrophysiology to clinical function and ultrastructure. *Circ Res* 52:188-199, 1983.
53. Rosen MR, Danilo P, Weiss RM: Actions of adenosine on normal and abnormal impulse initiation in canine ventricle. *Am J Physiol* 244:H715-H721, 1983.
54. Binah O, Legato MJ, Danilo P, Rosen MR: Developmental changes in the cardiac effects of amrinone in the dog. *Circ Res* 52:747-752, 1983.
55. Binah O, Rosen MR: Developmental changes in the interactions of amrinone and ouabain in canine ventricular muscle. *Dev Pharmacol Ther* 6:333-346, 1983.
56. Binah O, Cohen IS, Rosen MR: The effects of adriamycin on normal and ouabain-toxic canine Purkinje and ventricular muscle fibers. *Circ Res* 53:655-662, 1983.
57. Hewett K, Gessman L, Rosen MR: Effects of procainamide, quinidine and ethmozin on delayed afterdepolarizations. *Eur J Pharmacol* 96:21-28, 1983.
58. Rosen MR: The relationship of delayed afterdepolarizations to arrhythmias in the intact heart. *PACE* 6:1151-1156, 1983.
59. Moak JP, Rosen MR: Induction and termination of triggered activity by pacing in isolated canine Purkinje fibers. *Circulation* 69:149-162, 1984.
60. Untereker W, Danilo P, Rosen MR: Developmental changes in action potential duration, refractoriness, and conduction in the canine ventricular conducting system. *Ped Res* 18:53-58, 1984.
61. Reder R, Danilo P, Rosen MR: Developmental changes in  $\alpha$  adrenergic effects on canine Purkinje fiber automaticity. *Dev Pharmacol Ther* 7:94-108, 1984.
62. Hewett KW, Rosen MR: Alpha and  $\beta$  adrenergic interactions with ouabain-induced delayed afterdepolarizations. *J Pharmacol Exp Ther* 229:188-192, 1984.
63. Damiano BP, Rosen MR: Effects of pacing on triggered activity induced by early afterdepolarizations. *Circulation* 69:1013-1025, 1984.
64. Morikawa Y, Rosen MR: Developmental changes in the effects of lidocaine on the electrophysiological properties of canine Purkinje fibers. *Circ Res* 55:633-641, 1984.
65. Rosen MR, Weiss R, Danilo P, Jr.: Effect of  $\alpha$  adrenergic agonists and blockers on Purkinje fiber transmembrane potentials and automaticity in the dog. *J Pharmacol Exp Ther* 231:566-571, 1984.



**Original Articles continued:**

66. Damiano BP, le Marec H, Rosen MR: Electrophysiologic effects of AHR 10718 on isolated cardiac tissues. *Eur J Pharmacol* 108:243-255, 1985.
67. Vulliemoz Y, Verosky M, Rosen M, Triner L: Developmental changes in adenylate cyclase activity in canine myocardium. *Dev Pharmacol Ther* 7:409-421, 1984.
68. le Marec H, Dangman K, Danilo P, Rosen M: An evaluation of automaticity and triggered activity in the canine heart one to four days after myocardial infarction. *Circulation* 71: 1224-1236, 1985.
69. Morikawa Y, Meiri H, Spinelli W, Rosen MR, Robinson R: Modification of  $V_{max}$  of canine cardiac Purkinje fibers and the effects of lidocaine by SC-72-14. *Circ Res* 57:354-362, 1985.
70. Drugge E, Rosen MR, Robinson R: Neuronal regulation of the development of the  $\alpha$  adrenergic chronotropic response in the rat heart. *Circ Res* 57:415-423, 1985.
71. Hewett K, Rosen MR: Developmental changes in the rabbit sinus node action potential and its response to adrenergic agonists. *J Pharmacol Exp Ther* 235:308-312, 1985.
72. Binah O, Sadowick B, Vulliemoz Y, Danilo P, Rosen MR: The inotropic effects of amrinone and milrinone on neonatal and young canine cardiac muscle. *Circulation* 73: (Suppl III), III-46-51, 1986.
73. Kieval R, Johnson N, Rosen M: Triggered activity as a cause of bigeminy. *J Am Coll Cardiol* 8:644-647, 1986.
74. Morikawa Y, Rosen MR: Effects of quinidine on the transmembrane potentials of young and adult canine cardiac Purkinje fibers. *J Pharmacol Exp Ther* 236:832-837, 1986.
75. Spinelli W, Rosen M: Frequency dependent actions of phenytoin in adult and young canine Purkinje fibers. *J Pharmacol Exp Ther* 238:794-801, 1986.
76. le Marec H, Spinelli W, Rosen M: The effects of doxorubicin on ventricular tachycardia. *Circulation* 74:881-889, 1986.
77. Johnson N, Danilo P, Wit A, Rosen M: Characteristics of initiation and termination of catecholamine-induced triggered activity in atrial fibers of the coronary sinus. *Circulation* 74:1168-1179, 1986.
78. Spinelli W, Danilo P, Buchthal S, Rosen MR: Developmental changes in the effects of  $\beta$ -adrenergic blocking concentrations of propranolol on canine Purkinje fibers. *Dev Pharmacol Ther* 9:412-425, 1986.

**Original Articles continued:**

79. Moak JP, Reder RF, Danilo P Jr., and Rosen MR: Developmental changes in the interactions of cholinergic and  $\beta$ -adrenergic agonists on electrophysiologic properties of canine cardiac Purkinje fibers. *Ped Res* 20:613-618, 1986.
80. Johnson N, Spinelli W, and Rosen MR: Cardiac electrophysiologic effects of R 54718. *Eur J Pharmacol* 135:41-51, 1987.
81. Morikawa Y, Rosen MR, Meiri H, and Robinson RB: Developmental changes in the response of cardiac Purkinje fibers to SC-72-14. *Am J Physiol* 252:H771-H776, 1987.
82. Morikawa Y, Rosen TS, Hordof AJ and Rosen MR: Developmental changes in the effects of lidocaine and quinidine on the canine heart. *J Cardiovasc Pharmacol* 10:450-455, 1987.
83. Binah O, Arieli R, Beck R, Rosen MR, Palti Y: Ventricular electrophysiological properties: Is interspecies variability related to thyroid state? *Am J Physiol* 252: H1265-H1274, 1987.
84. Rosen M, Steinberg S, Chow Y-K, Bilezikian J, Danilo P: The role of a pertussis toxin-sensitive protein in the modulation of canine Purkinje fiber automaticity. *Circ Res* 62:315-323, 1988.
85. Kieval RS, Butler VP, Derguini F, Bruening RC, Rosen MR: Cellular electrophysiologic effects of vertebrate digitalis-like substances. *J Am Coll Cardiol* 11:637-643, 1988.
86. Molina Viamonte V, Hamra M, Rosen MR: Cardiac electrophysiologic effects of AHR 5360C. *Eur J Pharmacol* 146:215-222, 1988.
87. Malfatto G, Rosen TS, Rosen MR: The response to overdrive pacing of triggered atrial and ventricular arrhythmias in the canine heart. *Circulation* 77:1139-1148, 1988.
88. Spinelli W, Danilo P, Rosen MR: Reduction of  $V_{max}$  by QX-214 and benzocaine in neonatal and adult canine cardiac Purkinje fibers. *J Pharmacol Exp Ther* 245:381-387, 1988.
89. Hamra M, Danilo P, Rosen MR: Developmental changes in the effects of nadolol on adult and neonatal canine Purkinje fibers. *Dev Pharmacol Ther* 11:155-165, 1988.
90. Malfatto G, Zaza A, Forster M, Sodowick B, Danilo P, Rosen MR: Electrophysiologic, inotropic and antiarrhythmic effects of propafenone, 6-hydroxypropafenone and N-depropylpropafenone. *J Pharmacol Exp Ther* 246:419-426, 1988.
91. Leichter D, Danilo P, Boyden P, Rosen T, Rosen MR. A canine model of torsades de pointes. *PACE* 11:2235-2245, 1988.

**Original Articles continued:**

92. Shah A, Cohen IS, Rosen MR: Stimulation of cardiac  $\alpha$  receptors increases Na/K pump current and decreases  $g_K$  via a pertussis toxin-sensitive pathway. *Biophys J* 54:219-225, 1988.
93. Bilezikian JP, Steinberg SF, Horn EM, Robinson RB, Rosen MR: G Protein-adrenergic interactions in the heart. *Molecular and Cellular Biochemistry* 82:5-11, 1988.
94. Sun LS, Roberts LA, Rosen MR, Robinson RB: The positive chronotropic effect of acetylcholine has muscarinic and nicotinic components in the neonatal rat heart. *J Pharmacol Exp Ther* 247:585-589, 1988.
95. Hamra M, Rosen MR: Alpha-adrenergic receptor stimulation during simulated ischemia and reperfusion in canine cardiac Purkinje fibers. *Circulation* 78:1495-1502, 1988.
96. Rosen MR, Hamra M, Danilo P., Jr: Modulation of cardiac rhythm and arrhythmias by  $\alpha$  adrenergic stimulation. *New Trends in Arrhythmias*, Vol V-N.1: 69-73, 1989.
97. Horn EM, Johnson NJ, Bilezikian JP, Rosen MR: Developmental changes in the electrophysiological properties and the  $\beta$ -adrenergic receptor-effector complex in atrial fibers of the canine coronary sinus. *Circ Res* 65:325-333, 1989.
98. Zaza A, Malfatto G, Rosen MR: Electrophysiologic effects of ketanserin on canine Purkinje fibers, ventricular myocardium and the intact heart. *J Pharmacol Exp Ther* 250:397-405, 1989.
99. Zaza A, Kline R, Rosen M: Effects of  $\alpha$ -adrenergic stimulation on intracellular sodium activity and automaticity in canine Purkinje fibers. *Circ Res* 66:416-426, 1990.
100. Malfatto G, Rosen T, Steinberg S, Ursell P, Sun L, Daniel S, Danilo P, Jr, Rosen M: Sympathetic neural modulation of cardiac impulse initiation and repolarization in the newborn rat. *Circ Res* 66:427-437, 1990.
101. Molina-Viamonte V, Steinberg SF, Chow YK, Legato MJ, Robinson RB, and Rosen MR: Phospholipase C modulates automaticity of canine cardiac Purkinje fibers. *J Pharmacol Exp Ther* 252:886-893, 1990.
102. Rosen MR, Steinberg SF, Danilo P, Jr: Developmental changes in the muscarinic stimulation of canine Purkinje fibers. *J Pharmacol Exp Ther* 254:356-361, 1990.
103. Molina-Viamonte V, Rosen MR: Premature escape beats induced by overdrive pacing in canine Purkinje fibers: evidence for the role of normal automaticity as an underlying cellular mechanism. *Circulation* 82:234-243, 1990.

**Original Articles continued:**

104. del Balzo U, Rosen MR, Malfatto G, Kaplan LM, Steinberg SF: Specific  $\alpha_1$ -adrenergic receptor subtypes modulate catecholamine-induced increases and decreases in ventricular automaticity. *Circ Res* 67:1535-1551, 1990.
105. Jeck CD and Rosen MR: Use-dependent effects of lidocaine in neonatal and adult ventricular myocardium. *J Pharmacol Exp Ther* 255:738-743, 1990.
106. Hamra M, Molina-Viamonte V, Rosen MR: Transmembrane potential characteristics and muscarinic and  $\beta$ -adrenergic responsiveness in Purkinje fibers from a canine model of lethal ventricular arrhythmias. *J Cardiovasc Electrophysiol* 2:108-116, 1991.
107. Steinberg SF, Rosen TS, Malfatto G and Rosen MR: Beta adrenergic modulation of cardiac rhythm in a rat model of altered sympathetic neural development. *J Mol Cell Cardiol* 23:47-52, 1991.
108. Sun LS and Rosen MR: The electrophysiologic effects of bupivacaine on adult, neonatal, and fetal guinea pig papillary muscles. *Anesthesiology* 74:893-899, 1991.
109. Anyukhovskiy EP and Rosen MR: Abnormal automatic rhythms in ischemic Purkinje fibers are modulated by a specific  $\alpha_1$ -adrenergic receptor subtype. *Circulation* 83:2076-2082, 1991.
110. Steinberg SF, Robinson RB, Lieberman HB, Stern DM, Rosen MR: Thrombin modulates phosphoinositide metabolism, cytosolic calcium and impulse initiation in the heart. *Circ Res* 68:1216-1229, 1991.
111. Lee JH, Steinberg SF and Rosen MR: A WB 4101-sensitive  $\alpha_1$ -adrenergic receptor subtype modulates repolarization in canine Purkinje fibers. *J Pharmacol Exp Ther* 258:681-687, 1991.
112. Chang F, Cohen IS, DiFrancesco D, Rosen MR and Tromba C: Effects of protein kinase inhibitors on canine Purkinje fibre pacemaker depolarization and the pacemaker current  $I_p$ . *J Physiol* 440:367-384, 1991.
113. Lee JH and Rosen MR: Use-dependent actions and effects on transmembrane action potentials of flecainide, encainide, and ethmozine in canine Purkinje fibers. *J Cardiovasc Pharmacol* 18:285-292, 1991.
114. Molina-Viamonte V, Hamra M and Rosen MR: Cardiac electrophysiologic effects of 9-deoxydoxorubicin. *J Cardiovasc Electrophysiol* 2:419-430, 1991.
115. Molina-Viamonte V, Anyukhovskiy EP, Rosen MR: An  $\alpha_1$ -adrenergic receptor subtype is responsible for delayed afterdepolarizations and triggered activity during simulated ischemia and reperfusion of isolated canine Purkinje fibers. *Circulation* 84:1732-1740, 1991.

**Original Articles continued:**

116. Task Force of the Working Group on Arrhythmias of the European Society of Cardiology: The Sicilian Gambit. *Circulation* 84:1831-1851, 1991. (Simultaneously published in *European Heart Journal* 12:1112-1131, 1991.)
117. del Balzo U and Rosen MR: T wave changes persisting after ventricular pacing in canine heart are altered by 4-aminopyridine but not by lidocaine. *Circulation* 85:1464-1472, 1992.
118. Malfatto G, Rosen MR, Foresti A, Schwartz PJ: Idiopathic long QT syndrome exacerbated by  $\beta$ -adrenergic blockade and responsive to left cardiac sympathetic denervation: Implications regarding electrophysiologic substrate and adrenergic modulation. *J Cardiovasc Electrophysiol* 3:295-305, 1992.
119. Park JK, Danilo P Jr, Rosen MR: Effects of flunarizine on impulse initiation in canine Purkinje fibers. *J Cardiovasc Electrophysiol* 3:306-314, 1992.
120. Anyukhovskiy EP, Rybin VO, Nikashin AV, Budanova OP, Rosen MR: Positive chronotropic responses induced by  $\alpha_1$ -adrenergic stimulation of normal and "ischemic" Purkinje fibers have different receptor-effector coupling mechanisms. *Circ Res* 71:526-534, 1992.
121. Hamra M, Rosen MR: The influence of pH on the use-dependent effects of lidocaine in adult and neonatal canine Purkinje fibers. *Eur J Pharmacol* 230:167-175, 1993.
122. Sun LS, Legato MJ, Rosen TS, Steinberg SF, Rosen MR: Sympathetic innervation modulates ventricular impulse propagation and repolarisation in the immature rat heart. *Cardiovasc Res* 27: 459-463, 1993.
123. Lee JH and Rosen MR: Modulation of delayed afterdepolarisations by  $\alpha_1$  adrenergic receptor subtypes. *Cardiovasc Res* 27:839-844, 1993.
124. Lee JH and Rosen MR: Electrophysiologic effects of pirlmenol, its metabolite 2, and enantiomers, on cardiac Purkinje fibers. *J Cardiovasc Pharmacol* 22:416-422, 1993.
125. Sun LS, Sawyer WH, Steinberg SF, Rosen MR: Deaminovasopressin has direct and modulatory effects on ventricular automaticity in rat heart. *Cardiovasc Res* 27:1624-1628, 1993.
126. Geller JC, Rosen MR: Persistent T-wave changes after alteration of the ventricular activation sequence. New insights into cellular mechanisms of "cardiac memory." *Circulation* 88:1811-1819, 1993.
127. Geller JC, Rosen MR: Age related differences in the response to acidosis, hypoxia, and hyperkalaemia in canine cardiac Purkinje fibres. *Cardiovasc Res* 28:125-128, 1994.

**Original Articles continued:**

128. Lee JH, Rosen MR: Alpha<sub>1</sub>-adrenergic receptor modulation of repolarization in canine Purkinje fibers. J Cardiovasc Electrophysiol 5:232-240, 1994.
129. Anyukhovskiy EP, Steinberg SF, Cohen IS, Rosen MR: Receptor-effector coupling pathway for  $\alpha_1$ -adrenergic modulation of abnormal automaticity in 'ischemic' canine Purkinje fibers. Circ Res 74:937-944, 1994.
130. Chevalier P, Kuznetsov V, Robinson RB, Rosen MR: Tubulin binding agent CI-980 has positive inotropic and local anesthetic actions. J Cardiovasc Pharmacol 23:944-951, 1994.
131. Charpentier F and Rosen MR: Beta-Adrenergic regulation of action potentials and automaticity in young and adult canine Purkinje fibers. Am J Physiol 266 (Heart Circ Physiol 35):H2310-H2319, 1994.
132. Rosenshtraukh L, Danilo P Jr, Anyukhovskiy EP, Steinberg SF, Rybin V, Brittain-Valenti K, Molina-Viamonte V, Rosen MR: Mechanisms for vagal modulation of ventricular repolarization and of coronary occlusion-induced lethal arrhythmias in cats. Circ Res 75:722-732, 1994.
133. Anyukhovskiy EP and Rosen MR: Electrophysiologic effects of alprafenone on canine cardiac tissue. J Cardiovasc Pharmacol 24:411-419, 1994.
134. Shvilkin A, Danilo P Jr, Chevalier P, Chang F, Cohen IS, Rosen MR: Vagal release of vasoactive intestinal peptide can promote vagotonic tachycardia in the isolated innervated rat heart. Cardiovasc Res 28:1769-1773, 1994.
135. Rosenshtraukh LV, Danilo P, Steinberg SF, Rybin V, Rosen MR: Mechanisms of vagal modulation of lethal arrhythmias caused by coronary artery occlusion in cats. Kardiologiya 10:3-8, 1995.
136. Lee JH, Rosenshtraukh L, Beloshapko G, and Rosen MR: The electrophysiologic effects of ersentilide on canine hearts. Eur J Pharmacol 285:25-35, 1995.
137. Geller JC, Cua M, Prieto L, Guo S-D, Danilo P Jr, Rosen MR: Chloroethylclonidine increases the incidence of lethal arrhythmias during coronary occlusion in anesthetized dogs. Eur J Pharmacol 294:423-428, 1995.
138. Sosunov EA, Anyukhovskiy EP, Rosen MR: Effects of exogenous neuropeptide Y on automaticity of isolated Purkinje fibers and atrium. J Mol Cell Cardiol 28:967-975, 1996.
139. Sosunov EA, Anyukhovskiy EP, Rosen MR: Chronic *in vivo* and *in vitro* effects of amiodarone on guinea pig hearts. J Pharmacol Exp Ther 278:906-912, 1996.

**Original Articles continued:**

140. Charpentier F, Legato MJ, Steinberg SF, Cohen IS, Rosen MR: Beta-adrenergic modulation of Na-K pump activity in young and adult canine cardiac Purkinje fibers. *Am J Physiol* 271 (Heart Circ. Physiol. 40):H706-H712, 1996.
141. Anyukhovskiy EP, Sosunov EA, and Rosen MR: Regional differences in electrophysiological properties of epicardium, midmyocardium, and endocardium: in vitro and in vivo correlations. *Circulation* 94:1981-1988, 1996.
142. Charpentier F, Liu Q-Y, Rosen MR and Robinson RB: Age-related differences in  $\beta$ -adrenergic regulation of repolarization in canine epicardial myocytes. *Am J Physiol* 271:H-1174-H1181, 1996.
143. Anyukhovskiy EP, Sosunov EA and Rosen MR: Electrophysiologic effects of nifedipine (HE-11) on canine cardiac tissue. *J Pharmacol Exp Ther* 280:1137-1146, 1997.
144. Anyukhovskiy EP, Guo S-D, Danilo P Jr., Rosen MR: Responses to norepinephrine of normal and "ischemic" canine Purkinje fibers are consistent with activation of different  $\alpha_1$ -receptor subtypes. *J Cardiovasc Electrophysiol* 8:658-666, 1997.
145. Hara M, Liu Y-M, Zhen L, Cohen IS, Yu H, Danilo P Jr, Ogino K, Bilezikian JP, Rosen MR: Positive chronotropic actions of parathyroid hormone and parathyroid hormone-related peptide are associated with increases in the current,  $I_p$ , and the slope of the pacemaker potential. *Circulation* 96:3704-3709, 1997.
146. Sosunov EA, Anyukhovskiy EP, Rosen MR: Effects of quinidine on repolarization in canine epicardium, midmyocardium, and endocardium: I. In vitro study. *Circulation* 96:4011-4018, 1997.
147. Anyukhovskiy EP, Sosunov EA, Feinmark SJ, Rosen MR: Effects of quinidine on repolarization in canine epicardium, midmyocardium, and endocardium: II. In vivo study. *Circulation* 96:4019-4026, 1997.
148. Cua M, Shvilkin A, Danilo P Jr, Rosen MR: Developmental changes in modulation of cardiac repolarization by sympathetic stimulation: The role of  $\beta$ - and  $\alpha$ -adrenergic receptors. *J Cardiovasc Electrophysiol* 8:865-871, 1997.
149. Chevalier P, Ruffey F, Danilo P Jr., Rosen MR: Interaction between  $\alpha_1$  adrenergic and vagal effects on cardiac rate and repolarization. *J Pharmacol Exp Ther* 284:832-837, 1998.
150. Liu Q-Y, Rosen MR, McKinnon D, Robinson RB: Sympathetic innervation modulates repolarizing  $K^+$  currents in rat epicardial myocytes. *Am J Physiol* 274 (Heart Circ. Physiol 43): H915-H922, 1998.

**Original Articles continued:**

151. Hara M, Danilo Peter Jr, Rosen MR: Effects of gonadal steroids on ventricular repolarization and on the response to E4031. *J Pharmacol Exp Ther* 285:1068-1072, 1998.
152. Shvilkin A, Danilo P Jr, Wang J, Burkhoff D, Anyukhovskiy EP, Sosunov EA, Hara M, Rosen MR: Evolution and resolution of long-term cardiac memory. *Circulation* 97:1810-1817, 1998.
153. Members of the Sicilian Gambit: The search for novel antiarrhythmic strategies. *Eur Heart J* 19:1178-1196, 1998. Also published in *Japanese Circulation Journal* 62:633-648, 1998.
154. Yu H, McKinnon D, Dixon JE, Gao J, Wymore R, Cohen IS, Danilo P Jr, Shvilkin A, Anyukhovskiy EP, Sosunov EA, Hara M, Rosen MR: Transient outward current,  $I_{to1}$ , is altered in cardiac memory. *Circulation* 99:1898-1905, 1999.
155. Sosunov EA, Anyukhovskiy EP, Shvilkin A, Hara M, Steinberg SF, Danilo P Jr, Rosen MR, Möise NS, Mérot J, Probst V, Charpentier F, Legeay Y, LeMarec H: Abnormal cardiac repolarization and impulse initiation in German shepherd dogs with inherited ventricular arrhythmias and sudden death. *Cardiovasc Res* 42:65-79, 1999.
156. Ricard P, Danilo P Jr, Cohen IS, Burkhoff D, Rosen MR: A role for the renin-angiotensin system in the evolution of cardiac memory. *J Cardiovasc Electrophysiol* 10:545-551, 1999.
157. Hara M, Shvilkin A, Rosen MR, Danilo P Jr, Boyden PA: Steady-state and nonsteady-state action potentials in fibrillating canine atrium: abnormal rate adaptation and its possible mechanisms. *Cardiovasc Res* 42:455-469, 1999.
158. Rosen MR, Ricard P: The effect of abnormal ventricular activation on ventricular repolarization. *Cardiac Electrophysiology Monitor* 2:2-10, 1999.
159. Pinto JMB, Sosunov EA, Gainullin RZ, Rosen MR, Boyden PA: Effects of mibefradil, a T-type calcium current antagonist, on electrophysiology of Purkinje fibers that survived in the infarcted canine heart. *J Cardiovasc Electrophysiol* 10:1224-1235, 1999.
160. Sosunov EA, Gainullin RZ, Danilo P Jr, Anyukhovskiy EP, Kirchengast M, Rosen MR: Electrophysiological effects of LU111995 on canine hearts: In vivo and in vitro studies. *J Pharmacol Exp Ther* 290:146-152, 1999.
161. Robinson RB, Liu Q-Y, Rosen MR: Ionic basis for action potential prolongation by phenylephrine in canine epicardial myocytes. *J Cardiovasc Electrophysiol* 11:70-76, 2000.



**Original Articles continued:**

162. Yu H, Gao J, Wang H, Wymore R, Steinberg S, McKinnon D, Rosen MR, Cohen IS: Effects of the renin-angiotensin system on the current  $I_{to}$  in epicardial and endocardial ventricular myocytes from the canine heart. *Circ Res* 86:1062-1068, 2000.
163. Sosunov EA, Gainullin RZ, Moise NS, Steinberg SF, Danilo P Jr, Rosen MR:  $\beta_1$  and  $\beta_2$ -adrenergic receptor subtype effects in German shepherd dogs with inherited lethal ventricular arrhythmias. *Cardiovasc Res* 48:211-219, 2000.
164. Herweg B, Chang F, Chandra P, Danilo Jr P, Rosen MR: Cardiac memory in canine atrium. Identification and Implications. *Circulation* 103:455-461, 2001.
165. Allessie MA, Boyden PA, Camm AJ, Kléber AG, Lab MJ, Legato MJ, Rosen MR, Schwartz PJ, Spooner PM, Van Wagoner DR, Waldo AL: Pathophysiology and Prevention of Atrial Fibrillation. *Circulation* 103:769-777, 2001.
166. Plotnikov AN, Shvilkin A, Xiong W, de Groot JR, Rosenshtraukh L, Feinmark S, Gainullin R, Danilo P Jr, Rosen MR: Interactions between antiarrhythmic drugs and cardiac memory. *Cardiovasc Res* 50:335-344, 2001.
167. Patel PM, Plotnikov A, Kanagaratnam P, Shvilkin A, Sheehan CT, Xiong W, Danilo P Jr, Rosen MR, Peters NS: Altering ventricular activation remodels gap junction distribution in canine heart. *J Cardiovasc Electrophysiol* 12:570-577, 2001.
168. Pham TV, Sosunov EA, Gainullin RZ, Danilo P Jr., Rosen MR: Impact of sex and gonadal steroids on prolongation of ventricular repolarization and arrhythmias induced by  $I_K$ -blocking drugs. *Circulation* 103:2207-2212, 2001.
169. Rosen MR: Isolated tissue models and proarrhythmia. *Eur Heart J* 3:K64-K-69, 2001.
170. Meiry G, Reisner Y, Feld Y, Goldberg S, Rosen M, Ziv N, Binah O: Evolution of action potential propagation and repolarization in cultured neonatal rat ventricular myocytes. *J Cardiovasc Electrophysiol* 12: 1269-1277, 2001.
171. Sosunov EA, Anyukhovsky EP, Gainullin RZ, Plotnikov A, Danilo P Jr, Rosen MR. Long-term electrophysiological effects of regional cardiac sympathetic denervation of the neonatal dog. *Cardiovasc Res* 51:659-69, 2001.
172. Members of the Sicilian Gambit: New approaches to antiarrhythmic therapy. Emerging therapeutic applications of the cell biology of cardiac arrhythmias. *Eur Heart J* 22: 2148-2163, 2001. (Also published in *Circulation* 104:2865-2873, 2001 (Part I) and *Circulation* 104:2990-2994, 2001 (Part II) *Cardiovasc Res* 52:345-360, 2001).
173. Pham TV, Robinson RB, Danilo P Jr, Rosen MR: Effects of gonadal steroids on gender-related differences in transmural dispersion of L-type calcium current. *Cardiovasc Res* 53:752-762, 2002.

**Original Articles continued:**

174. Steinberg SF, Alcott S, Pak E, Hu D, Protas L, Möise NS, Robinson RB, Rosen MR:  $\beta$ -receptors increase cAMP and induce abnormal  $Ca_i$  cycling in the German shepherd sudden death model. *Am J Physiol Heart Circ Physiol* 282:H1181-H1188, 2002.
175. Sosunov EA, Anyukhovsky EP, Rosen MR: Adrenergic-cholinergic interaction that modulates repolarization in the atrium is altered with aging. *J Cardiovasc Electrophysiol* 13:374-379, 2002.
176. Yagi T, Pu J, Chandra P, Hara M, Danilo P Jr, Rosen MR, Boyden PA: Density and function of inward currents in right atrial cells from chronically fibrillating canine atria. *Cardiovasc Res* 54:405-415, 2002.
177. Anyukhovsky EP, Sosunov EA, Plotnikov A, Gainullin RZ, Jhang JS, Marboe CC, Rosen MR: Cellular electrophysiologic properties of old canine atria provide a substrate for arrhythmogenesis. *Cardiovasc Res* 54:462-469, 2002.
178. Rosen MR, Plotnikov AN: The pharmacology of cardiac memory. *Pharmacology and Therapeutics* 94: 63-75, 2002
179. Pham TV, Sosunov EA, Anyukhovsky EP, Danilo P Jr, Rosen MR: Testosterone diminishes the proarrhythmic effects of dofetilide in normal female rabbits. *Circulation* 106:2132-2136, 2002.
180. Rosen MR: The Electrocardiogram 100 Years later: Electrical Insights Into Molecular Messages. *Circulation* 106:2173-2179, 2002.
181. Qu J, Plotnikov AN, Danilo P Jr, Shlapakova I, Cohen IS, Robinson RB, Rosen MR: Expression and function of a biological pacemaker in canine heart. *Circulation* 107:1106-1109, 2003.

## BOOKS AND MONOGRAPHS

1. Rosen M, Hoffman B (eds.): Cardiac Therapy; Boston: Martinus Nijhoff, 1983.
2. Rosen M, Palti Y (eds.): Lethal Arrhythmias Resulting from Myocardial Ischemia and Infarction [Proceedings of the Second Rappaport Symposium]; Kluwer Academic Publishers: Norwell, Massachusetts, 1989.
3. Rosen MR, Janse MJ, Wit AL (eds.): Cardiac Electrophysiology: A Textbook: In Honor of Brian F. Hoffman; Futura Publishing Co., Inc., Mt. Kisco, N.Y., 1990.
4. Members of the Sicilian Gambit: Antiarrhythmic Therapy: A Pathophysiologic Approach; Futura Publishing Co., Inc., Armonk, N.Y., 1994.
5. Rosen MR and Breithardt G (eds.): Advancement in diagnosis and treatment of arrhythmias. Where are we heading, what is the future?; European Heart Journal 16 (Supplement G); 1995.
6. Artman M, Nakanishi T, Rosen M (eds.): Spotlight on Cardiovascular Development. Cardiovascular Research 31; E1-E159; 1996.
7. Zaza A and Rosen MR (eds): An Introduction to Cardiac Electrophysiology. Harwood Academic Publishers, Amsterdam, 2000.
8. Spooner PM, Rosen MR (eds): Foundations of Cardiac Arrhythmias. Marcel Dekker Inc, New York, 2000.

## REVIEWS, CHAPTERS AND EDITORIALS

1. Rosen M, Gelband H: Antiarrhythmic drugs, from appraisal and reappraisal of cardiac therapy. A Degraff and J. Frieden (eds.), Am Heart J 81:428-436, 1971.
2. Rosen M, Hoffman BF: Mechanisms of action of antiarrhythmic drugs. Circ Res 32:1-8, 1973.
3. Rosen M, Wit AL, Hoffman BF: Cellular electrophysiology of the mammalian heart. Am Heart J 88:380-385, 1974.
4. Wit AL, Rosen MR, Hoffman BF: Relationship of normal and abnormal electrical activity of cardiac fibers to the genesis of arrhythmias I - Automaticity. Am Heart J 88:515-524, 1974.
5. Wit AL, Rosen MR, Hoffman BF: Relationship of normal and abnormal electrical activity of cardiac fibers to the genesis of arrhythmias II - Reentry, Section I. Am Heart J 88:664-670, 1974.
6. Wit AL, Rosen MR, Hoffman BF: Relationship of normal and abnormal electrical activity of cardiac fibers to the genesis of arrhythmias II - Reentry, Section II. Am Heart J 88:798-806, 1974.
7. Hoffman BF, Rosen MR, Wit AL: The causes and treatment of cardiac arrhythmias. Part A. Am Heart J 89:115-122, 1975.
8. Hoffman BF, Rosen MR, Wit AL: Electrophysiology and pharmacology of cardiac arrhythmias III: The causes and treatment of cardiac arrhythmias. Part B. Am Heart J 89:253-257, 1975.
9. Rosen MR, Wit AL, Hoffman BF: Cardiac antiarrhythmic and toxic effects of digitalis. Am Heart J 89:391-399, 1975.
10. Gelband H, Rosen M: Pharmacologic basis for the treatment of cardiac arrhythmias. Pediatrics 55:59-67, 1975.
11. Rosen MR: Electrophysiology of the cardiac specialized conduction system. In: His Bundle Electrocardiography and Clinical Electrophysiology. O.S. Narula (ed.), Philadelphia:F.A. Davis, 1975, pp. 19-35.

**Reviews, Chapters and Editorials continued:**

12. Rosen MR, Hoffman BF, Wit AL: Cardiac antiarrhythmic effects of lidocaine. Am Heart J 89:526-536, 1975.
13. Rosen MR, Wit AL, Hoffman BF: Cardiac effects of verapamil. Am Heart J 89:665-673, 1975.
14. Hoffman BF, Wit AL, Rosen MR: Cardiac effects of quinidine and procaine amide. Part A. Am Heart J 89:804-808, 1975.
15. Hoffman BF, Wit AL, Rosen MR: Cardiac effects of quinidine and procaine amide. Part B. Am Heart J 90:117-122, 1975.
16. Wit AL, Rosen MR, Hoffman BF: Cardiac effects of diphenylhydantoin. Part A. Am Heart J 90:265-272, 1975.
17. Wit AL, Rosen MR, Hoffman BF: Cardiac effects of diphenylhydantoin. Part B. Am Heart J 90:397-404, 1975.
18. Wit AL, Hoffman BF, Rosen MR: Cardiac electrophysiologic effects of  $\alpha_1$ -adrenergic receptor stimulation and blockade. Part A. Am Heart J 90:521-533, 1975.
19. Wit AL, Hoffman BF, Rosen MR: Cardiac electrophysiologic effects of  $\alpha_1$ -adrenergic receptor stimulation and blockade. Part B. Am Heart J 90:665-675, 1975.
20. Wit AL, Rosen MR, Hoffman BF: Cardiac electrophysiologic effects of  $\alpha_1$ -adrenergic receptor stimulation and blockade. Part C. Am Heart J 90:795-803, 1975.
21. Danilo P, Rosen M: Cardiac effects of disopyramide. Am Heart J 92:532-536, 1976.
22. Rosen MR, Hoffman BF: Controversies in cardiovascular research (editorial). Circ Res 39:1, 1976.
23. Rosen M: Cellular electrophysiologic basis of cardiac arrhythmias. Angiology 28:289-299, 1977.

### **Reviews, Chapters and Editorials continued:**

24. Rosen M: Effects of pharmacological agents on mechanisms responsible for reentry. In: Reentrant Arrhythmias. H. Kulbertus (ed.), Lancaster:MTP Press, 1977.
25. Rosen MR, Hoffman BF: The cost of scientific communication: The scientist as ad-man (editorial). *Circ Res* 40:1-2, 1977.
26. Hoffman BF, Rosen MR: And more about money (editorial). *Circ Res* 40:2, 1977.
27. Rosen MR, Hordof AJ: Mechanisms of arrhythmias. In: Cardiac Arrhythmias in the Neonate, Infant and Child. N.K. Roberts and H. Gelband (eds.), New York:Appleton-Century Crofts, 1977, pp. 111-132.
28. Rosen MR, Hoffman BF: The vagus and the ventricles (editorial). *Circ Res* 42:1, 1978.
29. Hordof AJ, Rosen MR: The effects of quinidine and procaine amide. *Primary Cardiol* 4:26-30, 1978.
30. Reder R, Rosen MR: The role of the sympathetic nervous system in sudden cardiac death. *Drug Therapy* 8:41-52, 1978.
31. Rosen MR, Hoffman BF: Statistics, biomedical scientists and circulation research (editorial). *Circ Res* 42:739, 1978.
32. Rosen MR: Antiarrhythmic drugs. In: Current Cardiology, Vol. 1, I. Ferrer (ed.), Boston:Houghton Mifflin, 1979, pp. 259-303.
33. Coumel P, Krikler D, Rosen M, Wellens H, Zipes D: Newer antiarrhythmic drugs. *Pace* 1:521-528, 1978.
34. Shapiro AJ, Rosen MR: Pharmacology of antiarrhythmic drugs. In: Biomedical Information Corp., New York, 1979, pp. 17-23.
35. Rosen MR, Danilo P: The electrophysiological basis for cardiac arrhythmias. In: Cardiac Arrhythmias, Electrophysiology, Diagnosis and Management. O. Narula (ed.), Baltimore: Williams and Wilkins, 1979, pp. 3-13.

### **Reviews, Chapters and Editorials continued:**

36. Rosen MR, Danilo P: Digitalis-induced delayed afterdepolarizations. In: The Slow Inward Current. D.P. Zipes, J.C. Bailey and V.L. Elharrer (eds.), Boston:Martinus Nijhoff, 1980, pp. 417-435.
37. Rosen MR, Hordof AJ: The slow response in human atrium. In: The Slow Inward Current. D.P. Zipes, J.C. Bailey and V.L. Elharrer (eds.), Boston:Martinus Nijhoff, 1980, pp. 295-308.
38. Wit AL, Rosen MR: Cellular electrophysiology of cardiac arrhythmias. I. Arrhythmias caused by abnormal impulse generation. Modern Concepts of Cardiovascular Disease 50:1-6, 1981.
39. Wit AL, Rosen MR: Arrhythmias caused by abnormal impulse conduction. II. Modern Concepts of Cardiovascular Disease 50:7-12, 1981.
40. Reder R, Rosen M: Basic electrophysiologic principles: Application to treatment of dysrhythmias. In: Pediatric Cardiac Dysrhythmias. P. Gillette and A. Garson (eds.), New York:Grune & Stratton, 1981, pp. 121-144.
41. Hoffman BF, Rosen MR: Cellular mechanisms for cardiac arrhythmias. Circ Res 49:1-15, 1981.
42. Rosen MR, Reder RF: Does triggered activity have a role in the genesis of cardiac arrhythmias? Ann Int Med 94:794-801, 1981.
43. Rosen MR: Interactions of digitalis with the autonomic nervous system and their relationship to cardiac arrhythmias. In: Disturbances in Neurogenic Control of the Circulation, F. Abboud, H. Fozzard, J. Gilmore and D. Reis (eds.), Bethesda:Am Physiol Soc, 1981, pp. 251-263.
44. Rosen M: Cellular mechanisms of cardiac arrhythmias. In: Cardiac Arrhythmias: A Decade of Progress. D.C. Harrison (ed.), Boston:G.K. Hall, 1981, pp. 25-38.
45. Danilo P, Rosen MR: Antiarrhythmic drugs. In: Cardiac Pharmacology. D. Wilkerson (ed.), New York:Academic Press, 1981, pp. 275-303.

### **Reviews, Chapters and Editorials continued:**

46. Rosen MR, Dangman KH: The pathophysiology of tachycardias: experimental conditions. In: Cardiac Electrophysiology Today. A. Masoni and P. Albin (eds.), New York:Academic Press, 1982, pp. 173-185.
47. Reder R, Rosen M: Delayed afterdepolarizations and clinical arrhythmogenesis. In: Normal and Abnormal Conduction in the Heart. A. Paes de Carvalho, B. Hoffman, and M. Lieberman (eds.), New York:Futura, 1982, pp. 449-460.
48. Rosen M, Reder R: Electrophysiology of the fetal and neonatal heart. In: Perinatal Cardiovascular Function. N. Gootman and P. Gootman (eds.), New York:Dekker, 1983, pp. 201-225.
49. Rosen MR, Hoffman BF, (eds.) Cardiac Therapy. Boston: Martinus Nijhoff, 1983, pp. 567.
50. Rosen MR, Hoffman BF: Electrophysiologic determinants of normal cardiac rhythms and arrhythmias. Rosen MR, Hoffman BF, (eds.) Cardiac Therapy. Boston: Martinus Nijhoff, 1983, pp. 1-19.
51. Wit AL, Rosen MR: Pathophysiologic mechanisms of cardiac arrhythmias. Am Heart J 106:798-811, 1983.
52. Rosen MR, Wit AL: Electropharmacology of antiarrhythmic drugs. Am Heart J 106:829-839, 1983.
53. Miura DS, Rosen MR: New directions in the development of antiarrhythmic drugs. J Clin Pharm 24:333-341, 1984.
54. Rosen MR, Moak J, Damiano B: The clinical relevance of afterdepolarizations. In: Clinical Aspects of Life Threatening Arrhythmias. H. Greenberg, H. Kulbertus, A. Moss, P. Schwartz (eds.), New York:Ann NY Acad Sci, 1984, pp. 84-93.
55. Wit A, Rosen MR: Cellular electrophysiology of cardiac arrhythmias. In: Tachycardias: Mechanisms, Diagnosis, and Treatment. M. Josephson, H. Wellens (eds.), Philadelphia:Lea & Febiger, 1984, pp. 1-28.
56. Binah O, Rosen MR: The cellular mechanisms of cardiac antiarrhythmic drug action. In: Clinical Pharmacology of Cardiac Antiarrhythmic Drugs: Classical and Current Concepts Reevaluated. O. Garfein (ed.), New York:Ann NY Acad Sci 432, 1984, pp. 31-44.



### **Reviews, Chapters and Editorials continued:**

57. Danilo P Jr., Rosen MR: Arrhythmogenic effects of  $\alpha$ - and  $\beta$ -adrenergic amines. In: Pathogenesis of Stress-Induced Heart Disease. R. Beamish, V. Panagia, N. Dhalla (eds.), Boston:Martinus Nijhoff Publishers, 1985, pp. 102-112.
58. Rosen MR: Foreword; The Developing Heart. M. Legato (ed.), Boston:Martinus Nijhoff Publishers, 1985.
59. Rosen M, Robinson R, Danilo P: Developmental changes in cardiac-autonomic interactions. In: Cardiac Electrophysiology and Arrhythmias. D. Zipes and J. Jalife (eds.), New York:Grune and Stratton, 1985, pp. 159-164.
60. Rosen MR: Cellular electrophysiology of digitalis toxicity. J Am Coll Cardiol 5:22A-34A, 1985.
61. Rosen MR, Moak J, Damiano B: The basis of triggered activity. In: Pathobiology of Cardiovascular Injury. H.L. Stone and W.B. Weglicki (eds.), Boston:Martinus Nijhoff, 1985, pp. 98-105.
62. Rosen MR, Danilo P Jr.: Cellular electrophysiologic mechanisms of antiarrhythmic drug action. In: Mechanisms and Treatment of Cardiac Arrhythmias: Relevance of Basic Studies Clinical Management. H.J. Reiser, L.B. Horowitz (eds.), Baltimore:Urban & Schwarzenberg, pp. 71-88, 1985.
63. Rosen MR, Legato M: Repolarization: physiological and structural determinants and pathophysiological changes. Eur Heart J 6 (Suppl D):3-14, 1985.
64. Rosen MR: Is the response to programmed electrical stimulation diagnostic of mechanisms for arrhythmias? Circ Res 73:Suppl II; pp. II-18-II-27, 1986.
65. Wit AL, Rosen MR: Afterdepolarizations and triggered activity. In: The Heart and Cardiovascular System. H. Fozzard, E. Haber, R. Jennings, A. Katz, H. Morgan (eds.), New York: Raven Press, pp. 1449-1491, 1986.
66. Rosen MR and Robinson RB: Neural influences on automaticity. In: Neural Mechanisms and Cardiovascular Disease. B. Lown, A. Malliani, M. Prosdociami (eds.), Padova, Italy: Liviana Press, pp. 335-358, 1986.

### **Reviews, Chapters and Editorials continued:**

67. Rosen M, Janse M, Myerburg R: Arrhythmias induced by coronary artery occlusion: What are the electrophysiological mechanisms? In: Life-Threatening Arrhythmias During Ischemia and Infarction. D. Hearse, A. Manning, M. Janse (eds.), New York:Raven Press. pp. 11-47, 1987.
68. Rosen MR and Wit AL: Arrhythmogenic actions of antiarrhythmic drugs. Am J Cardio 59:10E-18E, 1987.
69. Rosen MR and Hoffman BF: NIH Fraud Guidelines. Science 235:1561, 1987.
70. Johnson NJ and Rosen MR: The distinction between triggered activity and other cardiac arrhythmias. In: Cardiac Arrhythmias: Where to Go From Here? P. Brugada and H.J.J. Wellens (eds.), Mt. Kisco, NY:Futura Publishing Co., Inc., pp. 129-145, 1987.
71. Danilo P and Rosen M: Pharmacodynamics of antiarrhythmic drugs. In: Cardiology; Volume 1. W. Parmley and K. Chatterjee (eds.), Philadelphia:JB Lippincott, Chapter 61, pp. 1-23, 1987.
72. Rosen M: Mechanisms for arrhythmias. Am J Card 61:2A-8A, 1988.
73. Rosen M: The links between basic and clinical cardiac electrophysiology. Circulation 77:251-263, 1988.
74. Rosen M and Wit A: Triggered activity. Progress in Cardiology 1:39-46, 1988.
75. Scheinman M, Akhtar M, Brugada P, Denes P, Garan H, Griffin JC, Rosen MR, Saksena S and Woosley R: Teaching objectives for fellowship programs in clinical electrophysiology. JACC 12:255-261, 1988.
76. Rosen MR, Danilo P Jr, Robinson RB, Shah A and Steinberg SF: Sympathetic neural and  $\alpha$ -adrenergic modulation of arrhythmias. In: The Sudden Infant Death Syndrome: Cardiac and Respiratory Mechanisms and Interventions. P.J. Schwartz, D.P. Southall and M. Valdes-Dapena (eds.), New York:The New York Academy of Sciences, pp. 200-209, 1988.
77. Rosen MR, Spinelli W: Some recent concepts concerning the mechanisms of action of antiarrhythmic drugs. PACE 11:1485-1498, 1988.

## **Reviews, Chapters and Editorials continued:**

78. Rosen MR, Robinson RB, Cohen IS and Bilezikian JP: Developmental changes in  $\alpha$ -adrenergic modulation of cardiac rhythm. In: Physiology and Pathophysiology of the Heart, Second Edition. N. Sperelakis (ed.), Boston:Kluwer Academic Publishers, pp. 413-422, 1989.
79. Spinelli W, Rosen MR: Autonomic mechanisms in cardiac rhythm and arrhythmias. In: Handbook of Experimental Pharmacology, Vol. 89. E.M. Vaughan Williams and T.J. Campbell (eds.), Berlin:Springer-Verlag, pp 621-639, 1989.
80. Rosen M, Hamra M: Alpha adrenergic modulation of impulse initiation in normal and ischemic cardiac fibers. In: Analysis and Simulation of the Cardiac System-Ischemia, Samuel Sideman and Rafael Beyar (eds.), Boca Raton, Fla.: CRC Press Inc., pp 138-145, 1989.
81. Rosen MR, Malfatto G, Johnson N, Rosen TS: Atrial arrhythmias induced by triggered activity. In: The Atrium in Health and Disease, Patrick Attuel, M.D., Philippe Coumel, M.D. and Michiel J. Janse, M.D. (eds.), Mt. Kisco, N.Y.; Futura Publishing Company, Inc., Chapter 1, pp 3-13, 1989.
82. Rosen MR: Mechanisms of cardiac impulse initiation and propagation. In: Electrical Therapy for Cardiac Arrhythmias, Sanjeev Saksena and Nora Goldschlager (eds.), W. B. Saunders Company, Philadelphia, Pa., Chapter 1, pp 3-8, 1989.
83. Wit AL and Rosen MR: Cellular electrophysiological mechanisms of cardiac arrhythmias. In: Comprehensive Electrocardiology, Theory and Practice in Health and Disease, Vol. 2; Peter W. MacFarlane and T. D. Veitch Lawrie (eds.), University of Glasgow, UK; Pergamon Press, Elmsford, N.Y., Section 6, pp 801-841, 1989.
84. Rosen MR and Robinson RB: Developmental changes in  $\alpha$  modulation of ventricular pacemaker function. In: Embryonic Origins of Defective Heart Development, Annals of the New York Academy of Sciences, Vol. 588; Dale E. Bockman and Margaret L. Kirby (eds.), New York Academy of Sciences, New York, NY, pp 137-144, 1990.
85. Rosen, M: To Gordon: A Remembrance. J Cardiovasc Electrophysiol 1:273-274, 1990.
86. Rosen MR, Bilezikian JP, Cohen IS, and Robinson RB: Alpha adrenergic modulation of cardiac rhythm. In: Cardiac Electrophysiology: From Cell to Bedside; Douglas P. Zipes, M.D. and Jose Jalife, M.D. (eds.); W. B. Saunders Co., Philadelphia, Pa., Chapter 34: pp 300-304, 1990.

### **Reviews, Chapters and Editorials continued:**

87. Rosen MR, Strauss HC, Atkinson HG, Fishman AP, Francis CK, Katz AM, Watanabe AM: AHA Medical/Scientific Statement - Special Report: The Report of the American Heart Association Task Force on Strategies to Increase Federal Research Funding. *Circulation* 82:1549-1559, 1990.
88. Rosen MR, Strauss HC, Atkinson HG, Fishman AP, Francis CK, Katz AM, Watanabe AM: AHA Medical/Scientific Statement - Special Report: The Report of the American Heart Association Task Force on Strategies to Increase Federal Research Funding. *Circ Res* 67:1047-1057, 1990.
89. Rosen MR, Janse MJ, Wit AL (eds.): Cardiac Electrophysiology: A Textbook: In Honor of Brian F. Hoffman; Futura Publishing Co., Inc., Mt. Kisco, N.Y.; 1990.
90. Rosen MR: The concepts of afterdepolarizations. In: Cardiac Electrophysiology: A Textbook: In Honor of Brian F. Hoffman; Futura Publishing Co., Inc., Mt. Kisco, N.Y.; pp 267-271, 1990.
91. Rosen MR: Delayed afterdepolarizations induced by digitalis. In: Cardiac Electrophysiology: A Textbook: In Honor of Brian F. Hoffman; Futura Publishing Co., Inc., Mt. Kisco, N.Y.; pp 273-281, 1990.
92. Rosen MR: Membrane effects of  $\alpha$  adrenergic catecholamines. In: Cardiac Electrophysiology: A Textbook: In Honor of Brian F. Hoffman; Futura Publishing Co., Inc., Mt. Kisco, N.Y.; pp 847-856, 1990.
93. Rosen MR: Antiarrhythmic drugs. In: Cardiac Pacing and Electrophysiology. Nabil El-Sherif and Philip Samet (eds); W.B. Saunders Co., Philadelphia, Pa.; Chapter 22, pp 401-408, 1990.
94. Rosen MR and Molina-Viamonte V: Letters to the Editor: Reply. *Circulation* 1991;83:353.
95. Rosen MR, Malfatto G, Hordof AJ, and Rosen TS: Abnormal impulse initiation in the human atrium. In: Atrial Arrhythmias: Current Concepts and Management. Paul Touboul and Albert Waldo (eds); Mosby Year Book, Inc., St. Louis, Missouri; pp 131-140, 1990.
96. Cohen IS, Shah A, Zaza A, Kline RP, Rosen MR: Ionic basis of the effects of  $\alpha$  agonists on Purkinje myocytes. In: Regulation of Potassium Transport Across Biological Membranes, L Reuss, J Russel, G Szabo (eds), Univ. Texas Press, pp 429-441, 1990.

### **Reviews, Chapters and Editorials continued:**

97. Rosen MR, Steinberg SF, Malfatto G and Rosen TS: Modulation of ventricular impulse initiation and repolarization by sympathetic innervation. In: Cardiac Electrophysiology, Circulation, and Transport. Samuel Sideman, Rafael Beyar and André G. Kléber (eds); Kluwer Academic Publishers, Norwell, Massachusetts; pp 169-178, 1991.
98. Steinberg SF and Rosen MR: Alpha-adrenergic receptor effector coupling. In: Electrophysiology and Pharmacology of the Heart; Dangman KH and Miura DS (eds); Marcel Dekker, Inc., New York, pp 433-441, 1991.
99. Rosen MR, Anyukhovskiy EP, Steinberg SF: Alpha adrenergic modulation of cardiac rhythm. *News in Physiological Sciences* 6:134-138, 1991.
100. Rosen MR: Principles of cardiac electrophysiology. In: Textbook of Internal Medicine, 2nd Edition, Vol 1; Kelley WN, DeVita VT Jr, DuPont HL, Harris ED Jr, Hazzard WR, Holmes EW, Hudson LD, Humes HD, Paty DW, Watanabe AM, Yamada T (eds); J. B. Lippincott Co, Phila, PA; pp 90-96, 1991.
101. Rosen MR and Anyukhovskiy EP: Arrhythmias triggered by afterdepolarizations. In: Cardiac Electrophysiology and Arrhythmias, Charles Fisch and Borys Surawicz (eds); Elsevier Science Publishing Co, Inc., NY; pp 67-75, 1991.
102. Rosen MR and Danilo P Jr: Developmental electrophysiology of the heart. In: Fetal and Neonatal Physiology, Vol 1; Polin RA and Fox WW (eds); W.B. Saunders Company, Phila, PA; pp 656-665, 1991.
103. Binah O and Rosen MR: Mechanisms of ventricular arrhythmias. *Circulation* 85: (Suppl) 1-25 - 1-31, 1991.
104. Malfatto G, Steinberg SF, Rosen TS, Danilo P Jr, Rosen MR: Experimental QT interval Prolongation. In: QT Prolongation and Ventricular Arrhythmias, Hashiba K, Moss AJ and Schwartz PJ (eds); New York Academy of Sciences, NY; pp 74-83, 1991.
105. Wit AL and Rosen MR: Afterdepolarizations and triggered activity: distinction from automaticity as an arrhythmogenic mechanism. In: The Heart and Cardiovascular System, Scientific Foundations, 2nd Edition, Vol 2; Fozzard HA, Haber E, Jennings RB, Katz AM, Morgan HE (eds); Raven Press, NY; pp 2113-2163, 1992.

### **Reviews, Chapters and Editorials continued:**

106. Rosen MR: Future Directions and Support of Research on Cardiovascular Disease and Stroke. In: Council on Basic Science Newsletter. American Heart Association. From Bench to Bedside; pp 2-3, March, 1992.
107. Danilo, P Jr, Rosen MR: Pharmacodynamics of antiarrhythmic drugs. In: Cardiology. An Illustrated Text/Reference, Chatterjee K, Cheitlin MD, Karliner J, Parmley WW, Rapaport E, Scheinman M (eds); JB Lippincott Co, Phila, Pa and Gower Medical Publishing. NY/London; Vol 1, pp 6.14-6.30, 1992.
108. Rosen MR, Janse MJ and Schwartz PJ: Counterpoint: The Sicilian Gambit: A response to Drs. Colatsky and Harrison. *Cardiovasc Res* 26:568-570, 1992.
109. Rosen MR, Jeck CD, Steinberg SF: Autonomic modulation of cellular repolarization and of the electrocardiographic QT interval. *J Cardiovasc Electrophysiol* 3:487-499, 1992.
110. Rosen MR; Did Wolff, Parkinson and White mind their P's and Q's? *Cardiovasc Res* 26:1164-1169, 1992.
111. Rosen MR: Mechanisms of Arrhythmias: Contributions of Cellular Electrophysiology. In: Tachycardias: Mechanisms and Management, Josephson ME, Wellens HJJ (eds); Futura Publishing Co., Inc., Mt. Kisco, -NY, 1993, pp 1-11.
112. Rosen MR and Lee JH: Letters to the Editor: Reply. *Cardiovasc Res* 1 993;27: 1886.
113. Jeck C and Rosen MR: Mechanisms of Cardiac Arrhythmias. In: Cardiovascular Pharmacology and Therapeutics, Singh BN, Dzau VJ, Vanhoutte PM, and Woosley RL (eds); Churchill Livingstone Inc., NY, 1994, pp 585-594.
114. Rosen MR: Book Review: Mechanisms of Arrhythmias (Janse MJ; Futura Publishing Co., Inc., Mt. Kisco, NY, 1993). *J Cardiovasc Electrophysiol* 5:397, 1994.
115. Rosen MR: Vagal effects of digitalis. In: Vagal Control of the Heart: Experimental Basis and Clinical Implications, Levy MN, Schwartz PJ (eds); Futura Publishing Co., Inc., Armonk, NY, 1994; pp 317-322.
116. Rosen MR: General concepts in the mechanisms of cardiac arrhythmias. In: Electropharmacological Control of Cardiac Arrhythmias, Singh BN, Wellens HJJ, Hiraoka M (eds); Futura Publishing Company Inc., Mt. Kisco, NY 1994, pp 75-81.

### **Reviews, Chapters and Editorials continued:**

117. Rosen MR: Chairman's Report. In: Council on Basic Science Newsletter. American Heart Association. From Bench to Bedside; pp 1-2, Fall, 1994.
118. Rosen MR, Bilezikian JP, Cohen IS, Robinson RB, Steinberg SF: Alpha-adrenergic Modulation of Cardiac Rhythm. In: Cardiac Electrophysiology: From Cell to Bedside. Second Edition, Zipes DP and Jalife J (eds); W. B. Saunders Co., Philadelphia, Pa, 1995; 435-441.
119. Rosen MR, Strauss HC, Janse MJ: The Classification of Antiarrhythmic Drugs. In: Cardiac Electrophysiology: From Cell to Bedside, Second Edition, Zipes DP and Jalife J (eds); W. B. Saunders Co., Philadelphia, Pa, 1995; 1277-1286.
120. Rosen MR, Robinson RB, Cohen IS, Steinberg SF, Bilezikian JP: Alpha-adrenergic modulation of cardiac rhythm in the developing heart. In: Physiology and Pathophysiology of the Heart, Third Edition, Sperelakis N (ed); Kluwer Academic Publishers, Norwell, MA, 1995; 457-465.
121. Rosen MR: Fast response action potential. In: Cardiac Arrhythmia: Mechanisms, Diagnosis, and Management, Podrid PJ and Kowey PR (eds); Williams & Wilkins, Baltimore, MD, 1995; 4147.
122. Rosen MR: Editorial Comments on Electrophysiological Mechanisms of Atrial Fibrillation by Allessie M, Konings K and Wijffels M. In: Atrial Arrhythmias: State of the Art, DiMarco JP and Prytowsky EN (eds.); Futura Publishing Co., Inc., Armonk, 1995, NY; 163-169.
123. Rosen MR and Oparil S: Fighting the NIH Funding Crisis. *Circulation* 91:2502, 1995.
124. Rosen MR: Chairman's Report. In: Council on Basic Science Newsletter. American Heart Association. From Bench to Bedside; pp 1-5, Spring, 1995.
125. Rosen MR: Consequences of the Sicilian Gambit. *European Heart Journal* 16 (Supplement G):32-36, 1995.
126. Rosen MR and Breithardt G: Advancement in diagnosis and treatment of arrhythmias. Where are we heading, what is the future? Foreword. *European Heart Journal* 16 (Supplement G):I, 1995.

### **Reviews, Chapters and Editorials continued:**

127. Rosen MR: The Classification of Antiarrhythmic Drugs: How Do We Educate the scientist and the Clinician? In: Antiarrhythmic Drugs; Breithardt G, Börggreffe M, Camm J and Shenasa M (Eds.), Springer-Verlag, Berlin, 1995; pp 393-404.
128. Rosen MR: Cardiac Arrhythmias and Antiarrhythmic Drugs: Recent advances in our understanding of mechanism. *J Cardiovasc Electrophysiol* 6 (Pt. II):868-879, 1995.
129. Rosen MR: Chairman's Report: Business as Usual? In: Council on Basic Science Newsletter, American Heart Association, From Bench to Bedside; pp 1-2, Fall, 1995.
130. Rosen MR: Crisis in Biomedical Research Funding. In: Council on Cardiovascular Disease in the Young Newsletter, American Heart Association, pp 6-7, Fall, 1995.
131. Rosen MR: Editorial: Long QT Syndrome Patients with Gene Mutations. *Circulation* 92:3373-3375, 1995.
132. Rosen MR: Mechanisms of cardiac arrhythmias (Meccanismi delle aritmie cardiache). *L'Ospedale Maggiore* 89 (3):225-232, 1995.
133. Rosen MR and Chevalier P: The Sicilian Gambit: A pathophysiologic approach to antiarrhythmic therapy. *Primary Cardiology* 21:18-22, 1995.
134. Chevalier P, Geller JC and Rosen MR: The basis for normal cardiac electrical activity and the effects thereon of hypoxia and acidosis. In: Tissue Oxygen Deprivation. From Molecular to Integrated Function. Haddad GG and Lister G (eds). Marcel Dekker, Inc. 1996; pp 479-496.
135. Artman M, Nakanishi T, Rosen M: Editorial commentary: Developmental cardiology enters adolescence. *Cardiovasc Res* 31:E1, 1996.
136. Rosen MR: Molecular biology of ion channels as a basis of drug action. In: Interventional Electrophysiology: A Textbook. Second Edition. Armonk, NY: Futura Publishing Co., Inc., 1996, 37-47.
137. Rosen MR, Hordof AJ and Mary-Rabine L: Cellular electrophysiology of normal and diseased human tissue. In: Atrial Flutter: Advances in Mechanisms and Management. Waldo AL, Touboul P (eds), Armonk, NY; Futura Publishing Co., Inc., 1996, 53-59.



### **Reviews, Chapters and Editorials continued:**

138. Rosen MR: Letters to the Editor: T Wave Memory. J Cardiovasc Electrophysiol 7:787-788, 1996.
139. Rosen MR: Editorial: Of Oocytes and Runny Noses. Circulation 94:607-609, 1996.
140. Roden DM, Lazzara R, Rosen M, Schwartz PJ, Towbin J, Vincent GM for the SADS Foundation Task Force on LQTS: Multiple mechanisms in the long-QT syndrome. Circulation 94:1996-2012, 1996.
141. Rosen MR and Boyden PA: Is there a pharmacology for discontinuous conduction? In: Discontinuous Conduction in the Heart. Spooner PM, Joyner RW, Jalife J (eds); Armonk, NY: Futura Publishing Co, Inc.; 1997.
142. Rosen MR: Antiarrhythmic drugs: Rethinking targets, development strategies, and evaluation tools. Am J Cardiol 81:21D-23D, 1998.
143. Rosen MR, Cohen IS, Danilo P Jr., Steinberg SF: The heart remembers. Cardiovasc Res 40:469-482, 1998.
144. Rosen MR: Properties and classification of antiarrhythmic drugs. Cardiac Electrophysiol Review 2:109-114, 1998.
145. Anyukhovskiy EP, Sosunov EA, Gainullin RZ, and Rosen MR: The controversial M cell. J Cardiovasc Electrophysiol 10:244-260, 1999.
146. Rosen MR, Anyukhovskiy EP, Sosunov EA and Gainullin RZ: Letters to the Editor. M Cell controversy. J Cardiovasc Electrophysiol 10:1297-1298, 1999.
147. Rosen MR: Molecular determinants of the T wave. In: Molecular Cardiology in Clinical Practice. Sanders MR, Kostis JB (eds); Norwell, MA: Kluwer Academic Publishers; 1999, pp 169-186.
148. Rosen MR: Leaky dikes and fibrillating swine. Circulation 100:1942-1944, 1999.
149. Steinberg SF, Robinson RB, and Rosen MR: Molecular and cellular bases of  $\beta$ -adrenergic modulation of cardiac rhythm. In: Cardiac Electrophysiology: From Cell to Bedside, Third Edition, Zipes DP and Jalife J (eds); W. B. Saunders Co., Philadelphia, Pa, 2000, 283-294.

### **Reviews, Chapters and Editorials continued:**

150. Rosen MR: Atrial remodeling. How to prevent it. [Proceedings of the 14<sup>th</sup> International Congress, the "New Frontiers" of Arrhythmias]. The Italian Journal of Cardiology 29:20-23, 2000.
151. Rosen MR, Pinto JMB, Boyden PA: Neurohumoral modulation of cardiac electrophysiologic properties. In: Zaza A and Rosen MR: (eds): An Introduction to Cardiac Electrophysiology. Harwood Academic Publishers, Amsterdam, 2000, pp 137-151.
152. Rosen MR: The Real Thing. Circ Res 87:6-7, 2000.
153. Clausen C, Rosen MR, Cohen IS: Synthesis of the cardiac Purkinje-fiber action potential using a computer model. In: Zaza A and Rosen MR: (eds): An Introduction to Cardiac Electrophysiology. Harwood Academic Publishers, Amsterdam, 2000, pp 199-216.
154. Camm AJ, Janse MJ, Roden DM, Rosen MR, Cinca J, Cobbe SM: Congenital and acquired long QT syndrome. Eur Heart J 21:1232-1237, 2000.
155. Robinson RB, Rosen MR, Steinberg SF: Changes in autonomic responsiveness during development. In: Sperelakis N, Kurachi Y, Terzic A, and Cohen MV (eds): Heart Physiology and Pathophysiology, Fourth Edition. Academic Press, San Diego, 2000, pp 761-776.
156. Rosen MR: What is cardiac memory? J Cardiovasc Electrophysiol 11:1289-1293, 2000.
157. Haverkamp W, Breithardt G, Camm AJ, Janse MJ, Rosen MR, Antzelevitch C, Escande D, Franz M, Malik A, Moss A, Shah S: The potential for QT prolongation and proarrhythmia by non-antiarrhythmic drugs: Clinical and regulatory implications. Report on a Policy Conference of the European Society of Cardiology. Eur Heart J 21:1216-1231, 2000. (Simultaneously published in Cardiovasc Res 2000;47:219-233.)
158. Rosen MR: Classification of Antiarrhythmic Drugs. Cardiac Electrophysiology Review 4: 181-185, 2000.
159. Spooner PM and Rosen MR: Perspectives on arrhythmogenesis, antiarrhythmic strategies and sudden cardiac death. In: Spooner PM, Rosen MR (eds): Foundations of Cardiac Arrhythmias. Marcel Dekker Inc., New York, 2000, 1-20.

**Reviews, Chapters and Editorials continued:**

160. Rosen MR: Developmental changes in the cardiac response to pharmacologic agents. In: Quan L, Franklin WH (eds). Ventricular Fibrillation: A Pediatric Problem. Armonk, NY: Futura Publishing Company, Inc., 2000, pp 209-223.
161. Rosen MR: The heart remembers: clinical implications. *Lancet* 357:468-471, 2001.
162. Rosen MR: Letters to the Editor. *J Cardiovasc Electrophysiol* 12:390-391, 2001.
163. Rosen MR, Robinson RB: Heart rate: a simple yet complex concept. *Dialogues in Cardiovasc Med* 6: 3-16, 2001.
164. Rosen MR: Mechanisms of cardiac arrhythmias: Focus on atrial fibrillation. *J Gender-Specific Med* 4: 37-47, 2001.
165. Pham TV, Rosen MR: Sex, hormones and repolarization. *Cardiovasc Res* 53:740-751, 2002.
166. Rosen MR: Blunderbuss to Mickey Mouse. The Evolution of Antiarrhythmic Targets. *Circulation* 106:1180-1182, 2002.
167. Rosen MR, Plotnikov A, Gainullin R, Chandra P, Herweg B and Danilo P Jr: Changes in heart rate and activation pathway and their role in modifying cardiac repolarization. In: Singh BN, Vanhoutte PM (eds). Selective & specific I<sub>1</sub> inhibition in cardiovascular disease. Lippincott Williams & Wilkins, London, UK, 2003, pp 37-44.

## ABSTRACTS

1. Rosen M, Lisak R, Rubin IL: Diphenylhydantoin in cardiac arrhythmias. *Circulation* 34 (Suppl. III):111-201, 1966.
2. Rosen M, Gelband H, Hoffman BF: Electrophysiologic effects of phentolamine on canine Purkinje fibers. *Am J Card* 26:657, 1970.
3. Rosen M, Gelband H, Hoffman BF: Effect of blood perfusion on electrophysiologic properties of canine Purkinje fibers. *Fed Proc* 30:668, 1971.
4. Hoffman BF, Butler VP, Jr., Gelband H, Rosen M: Effects of digoxin on the electrophysiologic properties of blood perfused canine Purkinje fibers. *Fed Proc* 30:393, 1971.
5. Gelband H, Bush H, Wigger H, Rosen M, Myerburg R, Hoffman BF: Etiology of supraventricular arrhythmias following surgery for congenital aortic stenosis. *Proc APS-SPR* 302, 1971.
6. Rosen M, Gelband H, Hoffman BF: Effect of plasma level of procaine amide on electrophysiologic properties of isolated canine cardiac Purkinje fibers. *The Pharmacologist* 13:181, 1971.
7. Rosen M, Gelband H, Hoffman BF: Effects of ouabain upon electrophysiologic properties of single cardiac cells and their electrocardiographic counterpart. *Circulation* 40:2-84, 1971.
8. Rosen M, Gelband H, Hoffman BF: Digitalis intoxication studied with microelectrode techniques. *Bull NY Acad Med* 47:1232, 1971.
9. Gelband H, Rosen M, Hoffman BF: Effect of digoxin on the electrophysiologic properties of canine Purkinje fibers utilizing a blood perfusion system. *Am Acad Ped; Section on Pediatric Cardiology*, October, 1971.
10. Rosen M, Gelband H, Butler VP, Jr., Hoffman BF: Studies of cardiac pharmacology in intact animals and isolated cardiac tissues. *Am J Card* 29:272, 1972.
11. Rosen M, Merker C, Gelband H, Hoffman BF: Effects of procaine amide on the cardiac ventricular conducting system. *Fed Proc* 31:524, 1972.

**Abstracts continued:**

12. Rosen M, Merker C, Gelband H, Hoffman BF: Correlation of electrocardiographic and cellular electrophysiologic events induced by procaine amide. Bull NY Acad Med 48:1054, 1972.
13. Danilo P, LeBourhis E, Rosen MR: Effects of dibutyl 3'-5'-cyclic AMP on electrophysiologic properties of canine Purkinje fibers. Fifth International Congress on Pharmacology, p. 51, 1972.
14. Weiss RM, Rosen MR, Albert DM, Hoffman BF: Effects on extracellular potassium concentration and catecholamines on resting membrane potential of murine neuroblastoma cells. The Physiologist 15:301, 1972.
15. Rosen M, Merker C: Some effects of ouabain toxicity on electrophysiologic properties of the canine ventricular conducting system. Circulation 46:II-39, 1972.
16. Rosen M, Gelband H, Merker C: Significance of ouabain induced low amplitude potentials in the induction of cardiac arrhythmias. Am J Card 31:155, 1973.
17. Danilo P, Vulliemoz Y, Verosky M, Rosen MR: Activation of cardiac Purkinje fiber adenyl cyclase by  $\beta$  adrenergic amines. Fed Proc 32:773, 1973.
18. Rosen MR, Albert D, Weiss RM: Determinants of resting membrane potential in a clonal cell line of murine neuroblastoma. Fed Proc 32:222, 1973.
19. Glicklich J, Gaffney R, Rosen MR, Hoffman BF: Cardiac effects of AY-22,241. Fed Proc 32:686, 1973.
20. Krongrad E, Merker C, Fenoglio JJ, Jr., Bassett AL, Rosen MR: Electrophysiologic-electrocardiographic correlations studied in the isolated canine heart. Fed Proc 32:447, 1973.
21. Krongrad E, Rosen MR, Merker C, Fenoglio J, Hoffman BF: Creation of Trifascicular block in isolated, blood-perfused canine hearts. Circulation 48:IV-21, 1973.
22. Rosen MR, Merker C, Pippenger CE: Effects of clinically relevant plasma lidocaine concentrations on electrophysiologic properties of canine Purkinje fibers. Circulation 48:IV-209, 1973.

**Abstracts continued:**

23. Rosen M, Ilvento J, Merker C: The electrophysiologic basis for the suppression of cardiac arrhythmias by verapamil. *Am J Card* 33:166, 1974.
24. Miura DS, Hodess AB, Rosen MR: Effects of dimethyl quaternary propranolol on electrophysiologic properties of isolated cardiac tissues. *Fed Proc* 33:475, 1974.
25. Danilo P, Vulliemoz Y, Verosky M, Rosen M: Epinephrine-induced automaticity and cAMP concentration in canine cardiac Purkinje fiber bundles. *Fed Proc* 33:479, 1974.
26. Rosen MR: Studies of blood-superfused cardiac muscle. *Proc VII World Congress of Cardiology, Buenos Aires*, p. 481, 1974.
27. Rosen MR, Vulliemoz Y, Hodes A, Verosky M, Hordof A: Effects of ouabain on the electrophysiologic properties of newborn, puppy and adult canine cardiac Purkinje fibers. *Circ* 50: (Suppl III):794, 1974.
28. Miura DS, Danilo P, Rosen MR: Effects of a dimethyl quaternary derivative of propranolol on the electrophysiologic properties of isolated canine cardiac tissue. *Bull NY Acad Med* 51:324, 1975.
29. Danilo P, Hordof A, Rosen M: Effects of disopyramide phosphate (Norpace) on electrophysiologic properties of isolated canine cardiac Purkinje fibers. *Am J Card* 35:130, 1975.
30. Hordof A, Danilo P, Rosen M: Developmental changes in cardiac action potential characteristics and their modification by ouabain. *Am J Card* 35:145, 1975.
31. Rosen M, Danilo P, Alonso M, Pippenger C: Effects of diphenylhydantoin on the electrophysiologic properties of blood-perfused Purkinje fibers. *Fed Proc* 34:775, 1975.
32. Hordof A, Edie R, Malm J, Rosen MR: Effects of procaine amide and verapamil on human atrial fibers. *Ped Res* 9:267, 1975.
33. Danilo P, Alonso MB, Rosen TS, Rosen MR: Effects of terbutaline and isoproterenol on cardiac automaticity and contractility. *Circulation* 51-52 (Suppl II):II-41, 1975.

### **Abstracts continued:**

34. Rosen MR, Alonso MB, Pippenger CE, Danilo P: Diphenyl-hydantoin effects on normal and depressed canine Purkinje fibers superfused with blood. *Circulation* 51-52 (Suppl II):II-234, 1975.
35. Hordof A, Edie R, Malm J, Rosen MR: Slow response action potential in human atrial fibers. *Circulation* 51-52 (Suppl II): II-20, 1975.
36. Rosenfeld J, Rosen MR, Wells W, Hoffman BF: Drug and behavioral effects on the first stage of arrhythmias following coronary occlusion. *Circulation* 51-52 (Suppl II):II-85, 1975.
37. Danilo P, Rosen MR, Langan WB, Hoffman BF: Effects of EN-313 on arrhythmias induced by coronary artery occlusion in the dog. *Am J Card* 37:130, 1976.
38. Hordof AJ, Spotnitz A, Rosen MR: Therapeutic and toxic effects of ouabain on human atrial specialized conducting fibers. *Am J Card* 37:143, 1976.
39. Miura DS, Hoffman BF, Rosen MR: The effect of extracellular potassium on the intracellular potassium activity of canine cardiac Purkinje fibers. *Biophys J* 16(2):208a, 1976.
40. Miura DS, Rosen MR, Hoffman BF: A direct method to measure intracellular potassium ion activity in beating canine cardiac Purkinje fibers using potassium sensitive microelectrodes. *Clin Res* 24(4):606A, 1976.
41. Miura DS, Hoffman BF, Rosen MR: The relationship of intracellular potassium activity to the transmembrane potential of cardiac Purkinje fibers. *Bull NY Acad Med* 53:317, 1977.
42. Miura DS, Hoffman BF, Rosen MR: Effect of ouabain in intracellular potassium activity and transmembrane potential of canine cardiac Purkinje fibers. *Fed Proc* 35:320, 1976.
43. Danilo P, Alonso MB, Rosen MR: Comparative effects of terbutaline and isoproterenol on cardiac cellular electrophysiological properties. *Bull NY Acad Med* 52:488, 1976.
44. Danilo P, Hordof A, Ilvento J, Alonso MB, Rosen MR: Age-related changes in automaticity and catecholamine responsiveness of canine cardiac Purkinje fibers. *Fed Proc* 35: 90, 1976.

### **Abstracts continued:**

45. Miura DS, Rosen M: An ionic basis for the age-related differences in the transmembrane potentials of canine cardiac Purkinje fibers. *Circulation* 54(4):73, 1976.
46. Mary-Rabine L, Hoffman BF, Rosen MR: Identification of a slow inward current during phase 0 of the action potential. *Circulation* 54(4):132, 1976.
47. Danilo P, Hordof A, Rosen MR: Differences in sensitivity to propranolol of neonatal and adult canine cardiac Purkinje fibers. *Am J Card* 39:304, 1977.
48. Mary-Rabine L, Perry N, Bowman F, Rosen MR: Alpha and  $\beta$ -adrenergic effects of epinephrine on automaticity of human atrium. *Am J Card* 39:291, 1977.
49. Mary-Rabine L, Perry N, Rosen MR: Age-related changes in lidocaine sensitivity of canine cardiac Purkinje fibers. *Fed Proc* 36:1033, 1977.
50. Danilo P, Hordof A, Slavin K, Rosen MR: Age-related changes in Purkinje fiber action potentials. *Fed Proc* 36:416, 1977.
51. Rosenfeld J, Rosen MR, Hoffman BF: Effects of drugs and behavioral influences on arrhythmias that immediately follow abrupt coronary occlusion: a canine model of sudden death. *Bull NY Acad Med* 52:489, 1976.
52. Danilo P, Ilvento J, Hordof AJ, Rosen MR: Purkinje fiber automaticity: Effects of  $\alpha$  and  $\beta$  adrenergic stimulation. *Bull NY Acad Med* 53:308, 1977.
53. Rosen T, Potter L, Reiss G, Rosen M: Effects of chronic propranolol administration in fetal and maternal rats. *Ped Res* 11:421, 1977.
54. Mary-Rabine L, Rosen MR: Sustained rhythmic activity in human atria. *Circulation* 56(4):178, 1977.
55. Hordof A, Rose E, Danilo P, Rosen MR: Alpha and  $\beta$ -adrenergic effects of epinephrine on ventricular pacemakers in dogs with complete heart block. *Circulation* 56(4):522, 1977.
56. Rosen T, Potter L, Lin M, Spector S, Rosen M: Fetal and neonatal serum and tissue propranolol levels: Effect of atrial automaticity and catecholamine responsiveness. *Circulation* 56(4):604, 1977.



**Abstracts continued:**

57. Pham TD, Wit AL, Hordof AJ, Rosen MR, Fenoglio JJ: Atrial ultrastructure in congenital heart disease: Effects of dilation. *Circulation* 56(4):661, 1977.
58. Danilo P, Jr., Rosen M, Hordof A: Effects of acetylcholine on ventricular automaticity. *Circulation* 56(4):916, 1977.
59. Vulliemoz Y, Verosky M, Rosen M, Triner L: Dog myocardial adenylate cyclase drug development. *Fed Proc* 36:318, 1977.
60. Danilo P, Hordof A, Delphin E, Rosen M: Verapamil effects on blood-superfused Purkinje fibers: Evidence for direct and catecholamine-mediated actions. *Am J Card* 41:417, 1978.
61. Danilo P, Hordof A, Rosen M: Effect of G-233 on Purkinje fiber action potentials. *Fed Proc* 37:789, 1978.
62. Danilo P, Rosen M, Hordof A: Effects of acetylcholine on ventricular automaticity. *Bull NY Acad Med* 54:313, 1978.
63. Mary-Rabine L, Hoffman B, Rosen M: Participation of the slow inward current in the phase 0 upstroke of premature depolarizations. *Bull NY Acad Med* 54:323, 1978.
64. Reder R, Danilo P, Rosen MR: Effects of CI845 on canine Purkinje fibers with fast and slow response action potentials. *The Pharmacologist* 20:149, 1978.
65. Reder R, Hordof A, Davies M, Danilo P, Rosen M: Age-related changes in adult canine cardiac Purkinje fiber action potentials. *Circulation* 57-58:II-46, 1978.
66. Levi R, Hordof A, Edie R, Rosen M: Histamine effects on human atria. *Circulation* 57-58:II-105, 1978.
67. Mary-Rabine L, Rosen MR: Sustained rhythmicity in human atria. *Transaction of the European Society of Cardiology*, I:171, 1978.
68. Mary-Rabine L, Rosen MR: AP characteristics of human ventricular fibers. *Transaction of the European Society Cardiology* I:369, 1978.

### **Abstracts continued:**

69. Pham TD, Hordof AJ, Rosen MR, Wit AL, Fenoglio JJ: Right atrial ultrastructure in congenital heart disease. *Lab Invest* 38:369, 1978.
70. Reder R, Danilo P, Rosen M: Age-related changes in effects of tetrodotoxin on cardiac Purkinje fibers. *Fed Proc* 38:880, 1979.
71. Shapiro J, Danilo P, Rosen M: Verapamil-propranolol interactions. *Fed Proc* 38:589, 1979.
72. Reder R, Danilo P, Rosen M: Effects of Pirmenol HCl on blood-superfused canine cardiac Purkinje fibers. *The Pharmacologist* 21:200, 1979.
73. Hordof A, Rosen M: Tetrodotoxin effects on diseased human atrium. *Am J Card* 43:429, 1979.
74. Ilvento J, Provet J, Rosen M: Accelerated idioventricular rhythm: A study of its mechanism in conscious dogs. *Circulation* 59-60 (Suppl II):II-86, 1979.
75. Lau, YH, Robinson R, Rosen M, Bilezikian JP:  $\alpha_1$ -adrenergic receptors in cultured rat cardiac myoblasts and fibroblasts. *Circulation* 59-60 (Suppl II):II-199, 1979.
76. Rosen M, Danilo P: Pharmacological effects on digitalis-induced delayed afterdepolarizations. *Circulation* 59-60 (Suppl II): II-210, 1979.
77. Rosen M, Fisch C, Hoffman B, Knoebel S: Delayed afterdepolarizations as a mechanism for accelerated junctional escape rhythm. *Circulation* 59-60 (Suppl II):II-253, 1979.
78. Untereker W, Hariman R, Hordof A, Boxer R, Edie R, Rosen M: Electrophysiology of right atrial hypertrophy in children. *Am J Card* 45:426, 1980.
79. Reder R, Miura D, Danilo P, Rosen M: The electrophysiologic properties of normal neonatal and adult canine cardiac Purkinje fibers. *Am J Card* 45:431, 1980.
80. Fox S, Hoffman B, Rosen M, Hoffman B: Effects of ethmozine and lidocaine on ventricular fibrillation and defibrillation in anesthetized dogs. *Am J Card* 45:474, 1980.

**Abstracts continued:**

81. Rosen M, Weiss RW: Age-related changes in Purkinje fiber conduction. Fed Proc 39:816, 1980.
82. Hewett K, Rosen M: Effects of ethmozine and procainamide on ouabain-induced afterdepolarizations. Fed Proc 39:966, 1980.
83. Untereker W, Danilo P, Rosen M: Age-related changes in Purkinje fiber repolarization. Fed Proc 39:967, 1980.
84. Reder R, Danilo P, Rosen M: Developmental changes in Purkinje fiber automaticity. Circulation 62:III-55, 1980.
85. Rosen M, Dangman K, Danilo P, Hoffman B, Hordof A, Mary-Rabine L, Reder R, Reemtsma K: Electrophysiology of human Purkinje and ventricular fibers. Circulation 62:III-56, 1980.
86. Hewett K, Vulliemoz Y, Rosen M: Age-related differences in ouabain sensitivity of canine Purkinje fibers. Circulation 62:III-137, 1980.
87. Hordof A, Gessman L, Danilo P, Rosen M: Ventricular arrhythmias resulting from triggered activity. Circulation 62:III-138, 1980.
88. Gessman L, Rosen M: The cellular electrophysiologic effects of digitalis and quinidine. Circulation 62:III-182, 1980.
89. Mary-Rabine L, Albert A, Hordof A, Kulbertus H, Fenoglio J, Pham TD, Rosen MR: Relationship of human cellular electrophysiology to clinical function and ultrastructure. Circulation 60:II-157, 1979.
90. Danilo P, Reder R, Garlick P, Mill J, Rosen M: Effects of sympathectomy on the response to catecholamine of canine Purkinje fibers. Fed Proc 40:414, 1981.
91. Rosen T, Mill J, Rosen M: Effects of propranolol administration on SHR rats and their newborns. Ped Res 15:470, 1981.
92. Walsh C, Valacer D, Malm J, Rosen M: Postoperative junctional tachycardia in pediatric patients. Ped Res 15:474, 1981.

### **Abstracts continued:**

93. Binah O, Rosen MR: Developmental changes in the inotropic effects of amrinone. *Circulation* 64:IV-22, 1981.
94. Rosen MR, Weiss RM, Danilo P: The actions of adenosine on normal and abnormal cardiac impulse initiation. *Circulation* 64:IV-50, 1981.
95. Binah O, Danilo P, Rosen M: Developmental changes in the effects of amrinone on cardiac contraction. *Am J Card* 49:993, 1982.
96. Hewett K, Rosen MR:  $\alpha_1$ -adrenergic modulation of digitalis-induced delayed afterdepolarizations and triggered activity. *Am J Card* 49:913, 1982.
97. Rosen M, Hordof A, Malm J, Mary-Rabine L: A cellular electrophysiologic study of human atrial fibrillation. *Am J Card* 49:908, 1982.
98. Binah O, Rosen MR: Amrinone-ouabain interactions in neonatal and adult canine ventricular muscle and Purkinje fiber. *The Pharmacologist* 24:227, 1982.
99. Moak J, Rosen M: The effects of pacing on ouabain-induced sustained rhythmic activity. *Circulation* 66:II-79, 1982.
100. Binah O, Cohen I, Rosen M: Adriamycin effects on afterdepolarizations and aftercontractions. *Circulation* 66:II-356, 1982.
101. Morikawa Y, Rosen MR: Developmental changes in electrophysiologic effects of lidocaine. *Fed Proc* 42:1289, 1983.
102. Damiano B, Rosen MR: The effects of pacing on early afterdepolarizations and triggered activity. *Fed Proc* 42:581, 1983.
103. Danilo P, Weiss R, Rosen M: Effects of  $\alpha_1$ - and  $\alpha_2$ -adrenergic blockade on automaticity of cardiac Purkinje fibers. *J Amer Coll Cardiol* 1:671, 1983.
104. Hordof A, Steeg C, Davies M, Rosen M: Variability of ventricular ectopic frequency in children with chronic ventricular arrhythmias. *Circulation* 68:III-328, 1983.

### **Abstracts continued:**

105. Moak JP, Rosen MR, Reder RF, Danilo P: Interactions of isoproterenol and acetylcholine on neonatal and adult canine cardiac Purkinje fibers. *Circulation* 68:III-329, 1983.
106. le Marec H, Danilo P, Rosen MR: Effects of pacing and drugs on arrhythmias in 24 hour canine myocardial infarction. *J Amer Coll Card* 3:542, 1984.
107. Morikawa Y, Rosen MR: Effects of quinidine on electrophysiologic properties of neonatal and adult canine Purkinje fibers. *Fed Proc* 43:842, 1984.
108. Damiano BP, le Marec H, Rosen MR: Effects of AHR 10718 on electrical activity of cardiac tissue. *Fed Proc* 43:962, 1984.
109. Danilo P, Stone HL, Watanabe A, Rosen MR: Catecholamine and acetylcholine effects on automaticity in canine arrhythmias associated with sudden death. *Fed Proc* 43:1009, 1984.
110. Drugge E, Robinson R, Rosen MR: The effect of sympathetic neurons on the  $\alpha$  adrenergic chronotropic response of rat myocardial cultures. *Fed Proc* 43:1020, 1984.
111. Morikawa Y, Meiri H, Robinson R, Rosen MR: Modulation of  $V_{max}$  of canine Purkinje fibers by a monoclonal Na channel antibody. *Circulation* II-272, 1984.
112. Hordof A, Steeg C, Garofano R, Rosen MR: Evaluation of ventricular tachycardia in children with ambulatory electrocardiography. *Circulation* 70:II-321, 1984.
113. Spinelli W, Danilo P, Jr., Rosen MR: Developmental changes in sensitivity to propranolol of neonatal and adult canine Purkinje fibers. *Fed Proc* 44:1903, 1985.
114. Drugge E, Rosen MR, Robinson RB: Neural regulation of the cardiac  $\alpha$  adrenergic response. *Fed Proc* 44:1734, 1985.
115. Morikawa Y, Rosen MR, Meiri H, Robinson RB: Developmental changes in the electrophysiologic response to a monoclonal Na channel antibody. *Fed Proc* 44:1477, 1985.
116. Johnson N, Danilo P, Jr., Wit A, Rosen MR: Characteristics of delayed afterdepolarizations and triggered activity induced by pacing the canine coronary sinus. *JACC* 5:462, 1985.

### **Abstracts continued:**

117. le Marec H, Spinelli W, Rosen MR: The effects of doxorubicin on cellular electrophysiologic mechanisms for arrhythmias. JACC 5:494, 1985.
118. Hordof A, Mary-Rabine L, Rosen M: Automaticity in human atrial fibers: relationship to membrane potential and modification by pharmacologic means. Proc Second World Congress of Pediatric Cardiology; Springer-Verlag, New York, 1985, p. 14.
119. Morikawa Y, Hordof A, Rosen T, Rosen M: Developmental changes in effects of lidocaine and quinidine. Proc Second World Congress of Pediatric Cardiology; Springer-Verlag, New York, 1985, p. 14.
120. Hordof A, Steeg C, Garofano M, Davies M, Rosen M: Ambulatory electrocardiography for the evaluation of ventricular arrhythmias in children. Proc Second World Congress of Pediatric Cardiology; Springer-Verlag, New York, 1985, p. 109.
121. le Marec H, Spinelli W, Rosen MR: Effects of doxorubicin on ventricular tachycardia in conscious dogs. Circulation 72:III-226, 1985.
122. Binah O, Avieli R, Beck R, Rosen M, Palti Y: Modulation of cardiac electrophysiological properties by metabolic rats. Circulation 72:III-231, 1985.
123. Johnson N, Danilo P, Wit A, Rosen MR: Response to pacing of triggered activity occurring in catecholamine treated canine coronary sinus. Circulation 72:III-381, 1985.
124. Spinelli W, Rosen MR: Developmental and use-dependent effects of phenytoin on neonatal and adult Purkinje fibers. JACC 7:123A, 1986.
125. Johnson N, Rosen MR: Developmental changes in delayed afterdepolarizations and triggered activity in canine coronary sinus. JACC 7:123A, 1986.
126. Kieval R, Butler VP, Derguini F, Bruening R, Nakanishi K, Rosen MR: Effects of vertebrate digitalis-like substances on the cellular electrophysiologic properties of Purkinje fibers. JACC 7:125A, 1986.
127. Morikawa Y, Hordof A, Rosen T, Rosen MR: Developmental changes in dose and plasma concentrations of lidocaine and quinidine. JACC 7:125A, 1986.

**Abstracts continued:**

128. Hamra M, Rosen MR: Effects of  $\text{Ca}^{2+}$  and  $\alpha$  and  $\beta$  adrenergic stimulation on automaticity of ischemic and reperfused Purkinje fibers. *Circulation* 74:II-30, 1986.
129. Leichter D, Danilo P, Rosen T, Rosen MR: Torsades de pointes induced by aconitine and quinidine in the canine heart. *Circulation* 74:II-349, 1986.
130. Rosen MR, Steinberg S, Chow Y, Bilezikian J, Danilo P: Pertussis toxin modifies  $\alpha_1$  adrenergic effects on Purkinje fiber automaticity via an  $\text{N}_i$ -like regulatory protein. *Circulation* 74:II-199, 1986.
131. Hamra M, Danilo P, Rosen MR: Developmental changes in cardiac electrophysiological and  $\beta$  blocking effects of nadolol. *Fed Proc* 45:781, 1986.
132. Zaza A, Forster M, Danilo P, Sodowick B, Rosen M: Electrophysiologic effects of propafenone and metabolites on canine Purkinje fibers. *Fed Proc* 46:871, 1987.
133. Molina Viamonte V, Rosen M: The cellular electrophysiologic effects of AHR 5360C. *Fed Proc* 46:871, 1987.
134. Molina Viamonte V, Rosen M: Modulation of Purkinje fiber automaticity by phospholipase C. *Circulation* 76:IV-14, 1987.
135. Zaza A, Kline RP, Rosen MR: Effects of  $\alpha$ -adrenergic stimulation on intracellular Na activity. *Circulation* 76:IV-62, 1987.
136. Spinelli W, Danilo P, Rosen MR: Ionized forms of local anesthetics are responsible for developmental changes in antiarrhythmic action. *Circulation* 76:IV-149, 1987.
137. Malfatto G, Rosen TS, Rosen MR: Triggered coronary sinus arrhythmias. *Circulation* 76:IV-429, 1987.
138. Horn E, Johnson N, Morrow BS, Rosen MR, Bilezikian JP: Developmental changes in delayed afterdepolarizations and N proteins in the canine coronary sinus. *Circulation* 76:IV-433, 1987.
139. Zaza A, Rosen MR: Cardiac electrophysiologic effects of ketanserin. *JACC* 11:140A, 1988.

### **Abstracts continued:**

140. Malfatto G, Sodowick B, Forster M, Danilo P, Rosen MR: Antiarrhythmic effects of 5-OH propafenone. JACC 11:256A, 1988.
141. Sun L, Rosen MR, Roberts L, Robinson R: The positive chronotropic effect of acetylcholine has muscarinic and nicotinic components in the neonatal rat heart. The FASEB Journal 2:A602, 1988.
142. Rosen MR: Fundamental mechanisms of cardiac arrhythmias. The FASEB Journal 2:A1682, 1988.
143. Hamra M, Molina Viamonte V, Rosen MR: Accentuated antagonism is diminished in the ventricles of dogs with healed myocardial infarction and susceptibility to lethal arrhythmias. The FASEB Journal 2:A930, 1988.
144. Malfatto G, Rosen T, Sun L, Steinberg S, Danilo P, Rosen MR: Sympathetic innervation in neonatal rats induces a GTP regulatory protein that modulates  $\alpha$  adrenergic effects on ventricular automaticity. Pediatric Research 23(Suppl.I):1401, 1988.
145. Rosen MR, Malfatto G, Johnson NJ, Rosen TS: Atrial arrhythmias induced by triggered activity. PACE 11:II-900, 1988.
146. Molina Viamonte V, Rosen M: Postlatidos: una variante de supresion por sobre estimulacion. Cardiologia 56:10, 1988.
147. Sun LS, Rosen MR, Robinson RB: Pre-and postsynaptic  $M_1$  effects on automaticity of cultured myocytes. Circulation 78:II-348, 1988.
148. Danilo P Jr, Rosen MR: Developmental changes in  $M_1$  and  $M_2$  muscarinic effects on automaticity of canine Purkinje fibers. Circulation 78:II-349, 1988.
149. Molina Viamonte V, Rosen MR: Effects of norepinephrine and a free radical generator on ischemic and reperfused isolated Purkinje fibers. Circulation 78:II-459, 1988.
150. Malfatto G, Steinberg SF, Rosen TS, Sun LS, Rosen MR: Long Q-T interval and abnormal  $\alpha$  adrenergic receptor-effector coupling. Circulation 78:II-557, 1988.



### **Abstracts continued:**

151. Zaza A, Kline RP, Rosen MR: Relazione Fra Effetti Della Stimolazione  $\alpha$  Adrenergica Sul Na Intracellulare E Sulla Automaticita': 2° Riunione Del Gruppo Di Studio "Cardiologia Sperimentale." C-36, 1988.
152. Malfatto G, Steinberg SF, Rosen TS, Sun LS, Rosen MR: L'Innervazione Simpatica Modula La Risposta Cronotropa Ventricolare Alla Stimolazione  $\alpha_1$ -Adrenergica Con La Induzione Di Una Proteina Regolatrice Legante Il GTP: 2° Riunione Del Gruppo Di Studio "Cardiologia Sperimentale." C-32, 1988.
153. Hamra M, Rosen MR: Developmental changes in lidocaine occur at neutral but not acidic pH. JACC 13:II-250A, 1989.
154. Molina Viamonte V, Rosen MR: The afterbeats induced by overdrive pacing are automatic. FASEB J 3:A969, 1989.
155. Jeck C, Rosen MR: Developmental changes in recovery from use-dependent effects of lidocaine correlate with action potential duration. FASEB J 3:A1020, 1989.
156. Del Balzo U, Malfatto G, Danilo P, Rosen MR: The response of  $\alpha_1$ -adrenoreceptor-mediated chronotropic activity to prazosin and chlorethylclonidine. FASEB J 3:A847, 1989.
157. Del Balzo U, Rosen MR: Physiologic effects of two  $\alpha_1$ -adrenoceptor subtypes in adult canine Purkinje fibers. Circulation 80: II-68, 1989.
158. Del Balzo U, Steinberg SF, Rosen MR: The  $\alpha_1$ -adrenergic increase in neonatal ventricular automaticity: Role of a distinct  $\alpha_1$ -receptor subtype. Circulation 80: II-656, 1989.
159. Jeck CD, Rosen MR: Age-related changes in outward current of canine epicardium. Circulation 80: II-658, 1989.
160. Lee JH, Steinberg SF, Del Balzo U, Rosen MR: Modulation of Purkinje fiber repolarization by an  $\alpha_1$ -adrenoceptor subtype. Circulation 80: II-1206, 1989.
161. Steinberg SF, Kaplan L, Lieberman HB, Stern DM, Rosen MR: Thrombin stimulates phosphoinositide hydrolysis and modulates impulse initiation in the heart. Circulation 80: II-1739, 1989.

### **Abstracts continued:**

162. Chang F, Rosen M, Tromba C, Cohen IS, DiFrancesco D: Effects of the protein kinase inhibitor H-7 on diastolic depolarization and the pacemaker current  $I_f$  in canine cardiac Purkinje fibers. *Biophysical Journal* 57:141a, 1990.
163. Lee, JH, Rosen MR: Effects of three antiarrhythmic drugs on action potential characteristics and kinetics of use-dependent block of canine Purkinje fibers. *The FASEB J* 4:A454, 1990.
164. del Balzo U, Rosen MR: 4-aminopyridine abolishes cardiac "memory." *Circulation* 82:III-100, 1990.
165. Anyukhovskiy EP, Rosen MR: A specific  $\alpha_1$ -receptor subtype modulates automaticity in "ischemic" Purkinje fibers. *Circulation* 82:III-521, 1990.
166. Park JK, Danilo P, Rosen MR: Flunarizine selectively suppresses delayed afterdepolarizations but not automaticity. *Circulation* 82:III-527, 1990.
167. Sun LS, Steinberg SF, Sawyer WH, Robinson RB, Rosen MR: Deaminovasopressin alters automaticity and the  $\alpha$  adrenergic response in young and adult heart. *Circulation* 82:III-563, 1990.
168. Molina-Viamonte V, Anyukhovskiy EP, Rosen MR: Delayed afterdepolarizations during simulated ischemia and reperfusion show  $\alpha_1$ -adrenergic receptor subtype specificity. *Circulation* 82:III-641, 1990.
169. Molina-Viamonte V, Rosen MR: AICA-riboside suppresses arrhythmias induced by coronary artery occlusion and reperfusion. *Circulation* 82:III-645, 1990.
170. Rosen MR: Alpha-adrenergic modulation of Cardiac Rhythm and arrhythmias. *Proceedings International Society for Pathophysiology I; Moscow; 1991, p 82.*
171. Lee JH, Danilo P Jr, Rosen MR:  $\alpha_1$ -adrenergic subtypes modulate both ouabain- and calcium-induced delayed afterdepolarizations and triggered activity in canine Purkinje fibers. *Circulation* 84:II-168, 1991.
172. Park JK, Danilo P, Rosen MR: Differential effects of direct and receptor-operated calcium channel agonists on adult and neonatal canine Purkinje fibers. *Circulation* 84:II-189, 1991.

**Abstracts continued:**

173. Danilo Peter Jr, Popilskis SJ, Zhang HL, Rosen MR: The effects of stellectomy on the electrocardiogram of the neonatal dog. *Circulation* 84:II-224, 1991.
174. Jeck CD, Rosen MR, Boyden PA: Ventricular repolarization in neonatal, young and adult dogs. *Circulation* 84:II-383, 1991.
175. Brittain-Valenti K, Danilo P Jr, Rosen MR: Modulation of reperfusion-induced arrhythmias by  $\alpha_1$ -adrenergic receptor subtypes in the cat. *Circulation* 84:II-494, 1991.
176. Anyukhovskiy EP, Rybin VO, Nikashin AV, Budanova OP, Rosen MR: The  $\alpha_1$ -adrenergic receptor-effector coupling pathway responsible for abnormal automaticity in "ischemic" canine Purkinje fibers. *Circulation* 84:II-494, 1991.
177. Sun L, Rosen T, Legato M, Rosen M: Sympathetic innervation modulates conduction and the  $\alpha_1$ -adrenergic effect on repolarization in the rat heart. *FASEB* 5:A1497, 1991.
178. Rosen MR: The Sicilian Gambit: A new approach to antiarrhythmic drug classification. *European J Cardiac Pacing and Electrophysiology* 2 (Suppl 1A):A127, 1992.
179. Lee JH, Rosen MR: Mechanism of  $\alpha_1$ -adrenergic prolongation of canine Purkinje fiber action potentials. *Circulation* 86: (Suppl) I-566, 1992.
180. Wang DY, Kim JH, Rosen MR: Alpha-adrenergic receptor stimulation has no effects on automaticity and the Na/K pump in rabbit sinoatrial node. *Circulation* 86:(Suppl) I-566, 1992.
181. Brittain-Valenti, Danilo P Jr, Steinberg SF, Dell RB, Rosen MR: Modulation of ischemia-induced arrhythmias by  $\alpha_1$ -adrenergic receptor subtypes in the cat. *Circulation* 86: (Suppl) I-216, 1992.
182. Geller JC, Rosen MR: Cellular mechanisms for cardiac memory. *Circulation* 86:(Suppl) I-821, 1992.
183. Anyukhovskiy EP, Steinberg SF, Rosen MR: An  $\alpha_1$ -receptor subtype linked to a pertussis toxin sensitive G protein modulates automaticity in "ischemic" canine Purkinje fibers via an influence on membrane conductance. *Circulation* 88:(Suppl) I-382, 1993.

**Abstracts continued:**

184. Geller JC, Rosen MR: Alpha<sub>1</sub>-adrenoceptor influence on the incidence of arrhythmias during coronary occlusion and reperfusion in anesthetized dogs. JACC February 183A:#750-4, 1994.
185. Rosenshtraukh LV, Danilo P Jr, Rybin VO, Steinberg SF, Rosen MR: Vagal modulation of ventricular repolarization and fibrillation in cats. JACC February 445A:#811-3, 1994.
186. Rosen MR: The Sicilian Gambit is a Helpful Approach to Drug Classification. Eur JCPE 2 (Suppl 4);18, 1994.
187. Chevalier P, Danilo P Jr, Rosen MR: Alpha<sub>1</sub>-adrenergic receptor subtype potentiation of vagal effects on the ECG of the vagally-innervated isolated guinea pig heart. Circulation 90 (No.4):I-246, 1994.
188. Shvilkin A, Danilo P Jr, Chevalier P, Chang F, Cohen IS, Rosen MR: Vagal release of vasoactive intestinal peptide reverses vagotonic bradycardia in isolated, innervated rat heart. Circulation 90 (No.4):I-269, 1994.
189. Charpentier F, Rosen MR, Robinson RB: Developmental changes in  $\beta$ -adrenergic regulation of repolarization in canine epicardial cells. Circulation 90 (No.4):I-581, 1994.
190. DeGroot JR, Shvilkin A, Steinberg SF, Rosenshtraukh L, Danilo PJr, Rosen MR: Modulation of lethal ventricular arrhythmias after acute coronary occlusion in cats by subtype-specific alpha<sub>1</sub>-adrenergic blockade. Circulation 92 (No. 8):I-257, 1995.
191. Gao J, Yu J, Cohen IS, Wymore RR, Rosen MR, Danilo P Jr: Long-standing cardiac memory in dogs is attributable to an altered activation threshold for I<sub>to</sub>. Circulation 92 (No. 8):I-300,1995.
192. Cua M, Shvilkin A, Rosen MR, Danilo PJr: Developmental changes in cardiac responses to sympathetic stimulation in dogs; the role of  $\beta$  and  $\alpha$ -adrenergic receptors. Circulation 92 (No.8): I-434, 1995.
193. Sosunov EA, Anyukhovskiy EP, Rosen MR: Pre- and Postjunctional effects of neuropeptide Y on automaticity of cardiac pacemaker tissues. Circulation 92 (No.8): I-435,1995.

### **Abstracts continued:**

194. Anyukhovsky EP, Guo S-D, Danilo PJr., Rosen MR: Different  $\alpha_1$ -adrenergic receptor subtypes modulate the WB4101-sensitive increases in automaticity of normal and ischemic canine Purkinje fibers. *Circulation* 92 (No.8):I-451,1995.
195. Sosunov EA, Anyukhovsky EP, Rosen MR: Chronic effects of amiodarone on the ECG and action potentials in guinea pigs. *Circulation* 92 (No.8):I-575,1995.
196. Hara M, Liu Y-M, Cohen IS, Yu H, Danilo P Jr, Ogino K, Bilezikian JP, Rosen MR: Parathyroid hormone and related peptide modulate impulse initiation and pacemaker current in heart. *Circulation* 92 (No.8): I-639,1995.
197. Liu Q-Y, Rosen MR, Robinson RB: Sympathetic innervation modulates repolarizing  $K^+$  currents in neonatal rat ventricular epicardial myocytes. *Circulation* 92 (No.8):I-639,1995.
198. Sosunov EA, Anyukhovsky EP, Rosen MR: Comparison of repolarization of cells from different layers of myocardium in vitro and in vivo. *Biophys J* 70 (2 Pt.2): A276, 1996.
199. Shvilkin A, Weller R, Anyukhovsky EP, Sosunov EA, Hara M, Popilskis S, Rosen MR, Danilo P Jr: ECG characteristics, time course of evolution, and action potential determinants of long-term cardiac memory. *Circulation* 94 (No.8):I-6, 1996.
200. Ricard P, Yu H, Danilo P Jr, Gao J, Wymore R, Cohen IS, Rosen MR: The role of the renin-angiotensin II system in cardiac T-wave memory. *Circulation* 94 (No.8):I-6, 1996.
201. Hara M, Danilo P Jr, Ogino K, Bilezikian JP, Rosen MR: The effects of parathyroid hormone and related peptide on sinoatrial node impulse initiation are attributable to an action on the pacemaker current,  $I_f$ . *Circulation* 94 (No.8):I-474, 1996.
202. Anyukhovsky EP, Sosunov EA, Rosen MR: Modulation of repolarization by quinidine in different myocardial layers in vitro and in vivo. *Biophys J* 72 (2):A47, 1997.
203. Sosunov EA, Anyukhovsky EP, Rosen MR: Antiarrhythmic and electrophysiologic effects of chronically administered amiodarone in isolated guinea pig hearts. *Biophys J* 72 (2):A47, 1997.
204. Sosunov EA, Anyukhovsky EP, Rosen MR: Use of activation recovery intervals to determine differences in repolarization of cells from different myocardial layers. *Proc. XXXIII IUPS*; 1997, PO49.20.

### **Abstracts continued:**

205. Rosen MR, Shvilkin A, Ricard P, Cohen I, Yu H, Gao J, McKinnon D, Burkoff D, Danilo P: Effects of electrical and mechanical conditioning on repolarization. Proc. XXXIII IUPS; 1997, LO60.01.
206. Sosunov EA, Anyukhovskiy EP, Moise NS, Danilo P, Rosen MR: Delayed afterdepolarizations in myocardium as a mechanism for inherited ventricular arrhythmias in dogs. Circulation 96: I-7, 1997.
207. Yu H, Rosen MR, Danilo P, Steinberg SF, Wymore RS, Wang H-S, McKinnon D, Cohen IS: Angiotensin II alters  $I_{to}$  properties in cardiac ventricular myocytes. Circulation 96: I-295, 1997.
208. Liu Q-Y, Rosen MR, Robinson RB: Alpha-adrenergic agonists modulate  $I_{to}$  in rat epicardial but not endocardial myocytes. Circulation 96: I-296, 1997.
209. Shvilkin A, Xiong W, Danilo P, Rosen MR: Regional changes in ventricular repolarization in long-term cardiac memory. Circulation 96: I-358, 1997.
210. Rosen MR, Rosenshtraukh LV, Beloshapko G, Yushmanova A: Interactions between quinidine and short-term cardiac memory in the intact dog. Circulation 96: I-358, 1997.
211. Shvilkin A, Danilo P, Xiong W, Rosen MR: Endothelin-A receptor blockade inhibits expression of short-term cardiac memory in conscious dogs. Circulation 96: I-359, 1997.
212. Hara M, Danilo P, Shvilkin A, Ruffey F, Rosen MR: Changes in steady-state and nonsteady-state action potentials induced by chronic atrial fibrillation. Circulation 96: I-237, 1997.
213. Hara M, Danilo P, Rosen MR: Effects of E4031 and chronic administration of gonadal steroids on cardiac action potentials. Circulation 96: I-500, 1997.
214. Patel P, Sheehan C, Shvilkin A, Danilo P Jr, Rosen MR, Peters NS: Differential remodelling of transmural connexin43 expression with ventricular pacing. Eur Heart J 19: 77, 1998.
215. Sosunov EA, Gainullin RZ, Anyukhovskiy EP, Moise NS, Danilo P Jr, Steinberg SF, Rosen MR: Abnormal  $\beta$ -adrenergic receptor-effector coupling characterizes German shepherd dogs with inherited lethal ventricular arrhythmias. Circulation 98: I-745, 1998.

### **Abstracts continued:**

216. Patel P, Sheehan C, Shvilkin A, Danilo P Jr, Rosen MR, Peters NS: Differential remodeling of connexin43 expression with ventricular pacing. *Circulation* 98: I-684, 1998.
217. Clausen C, Cohen IS, Rosen MR: Mathematical models of cardiac action potentials confirm the ability of SCN5A and HERG mutations in congenital long QT syndrome to induce early afterdepolarizations. *Circulation* 98: I-10, 1998.
218. Pham TV, Robinson RB, Rosen MR: Chronic gonadal steroid effects on ventricular repolarization are not dependent on  $I_{K1}$ ,  $I_{Kr}$ , and  $I_K$ . *Biophys J* 76 (1): A87, 1999.
219. Sosunov EA, Gainullin RZ, Moise NS, Danilo P Jr, Rosen MR:  $\beta_1$  and  $\beta_2$  adrenergic receptor subtype effects in german shepherds with inherited lethal ventricular arrhythmias. *Circulation* 100: I-270, 1999.
220. Herweg B, Chang F, Danilo P Jr, Rosen MR: Cardiac memory is demonstrable in atrium. *Circulation* 100: I-159, 1999.
221. Plotnikov AN, Xiong W, Danilo P Jr, Rosen MR: The relationship of long-term cardiac memory to changes in ventricular activation, repolarization and effective refractory period. *Circulation* 100: I-50, 1999.
222. Plotnikov AN, Xiong W, Shvilkin A, Feinmark S, Danilo P Jr, Rosen MR: Long-term cardiac memory induces an antiarrhythmic effect as well as modifying the action of some antiarrhythmic drugs. *Circulation* 100: I-50, 1999.
223. Chang F, Herweg B, Danilo P Jr, Rosen MR: Effects of atrial rate and activation sequence on TA wave memory. *Circulation* 100: I-50, 1999.
224. Sosunov E, Gainullin R, Anyukhovskiy E, Moise NS, Rosen MR. Heterogeneity of left ventricular repolarization provides a substrate for pause-dependent arrhythmias in German shepherd dogs with inherited sudden death. *PACE* 23:639, 2000.
225. Plotnikov AN, Xiong W, Shvilkin A, Feinmark S, deGroot JR, Danilo P Jr, Rosen MR: Ventricular pacing prior to and during antiarrhythmic drug administration alters electrophysiologic responses to drugs and contributes to the limited accuracy of electrophysiologic testing. *PACE* 23:569, 2000.

### **Abstracts continued:**

226. Pham T, Sosunov E, Gainullin R, Danilo P Jr, Rosen MR: Gender-related differences in susceptibility to lethal ventricular arrhythmias: roles of gonadal steroids in normal and castrated rabbits. *PACE* 23:604, 2000.
227. Pham T, Sosunov E, Gainullin R, Robinson R, Rosen MR: Gender-related differences in transmural dispersion of the L-type calcium current in rabbit ventricles. *PACE* 23:638, 2000.
228. Chandra P, Herweg B, Rosen TS, Danilo P, Rosen MR: Altered activation induces atrial memory and atrial tachyarrhythmias in canine heart. *Circulation* 102:1579, 2000.
229. Plotnikov A, Gainullin RZ, Danilo P, Rosen MR: Pacing with epicardial strip electrodes to induce cardiac memory modifies effective refractory periods in a manner that is potentially antiarrhythmic. *Circulation* 102:3798, 2000.
230. Herweg B, Chandra P, Anyukhovskiy EP, Sosunov EA, Danilo P Jr, Rosen MR: The physiologic right to left atrial gradient of action potential duration and refractoriness decreases with pacing induced atrial fibrillation. *J Am Coll Cardiol* 37: 111A, 2001.
231. Yagi T, Dun W, Rosen MR, Boyden PA:  $\text{Ca}^{2+}$  dependent and  $\text{Ca}^{2+}$  independent changes in calcium currents in cells from aged canine atrium. *PACE* 24:596, 2001.
232. Binah OY, Meiri G, Reisner Y, Feld Y, Goldberg S, Ziv N, Rosen MR: Evolution of action potential propagation and repolarization in cultured neonatal rat ventricular myocytes. *PACE* 24:623, 2001.
233. Dun W, Yagi T, Rosen MR, Boyden PA: Altered  $I_{\text{to}}$  and upregulated  $I_{\text{sus}}$  in right atrial cells from aged hearts contribute to altered action potential profiles. *PACE* 24:644, 2001.
234. Patberg KW, Plotnikov A, Gainullin R, Quamina A, Samaniengo L, Danilo P, Rosen MR, Sun L: Cardiac memory is associated with alterations in the cAMP responsive element binding protein and its phosphorylated form. *PACE* 24:645, 2001.
235. Patberg KW, Plotnikov AN, Quamina A, Gainullin RZ, Danilo P Jr, Sun LS, Rosen MR: Effects of left ventricular pacing on the cAMP response element binding protein (CREB) in canine heart. *Circulation* 104:II-24, 2001.



### **Abstracts continued:**

236. Chandra P, Rosen TS, Herweg B, Plotnikov AN, Danilo P Jr, Rosen MR: Evolution of the atrial gradient may predict a propensity to atrial tachyarrhythmias. *Circulation* 104:II-109, 2001.
237. Dun W, Yagi T, Chandra P, Danilo P Jr, Rosen MR, Boyden PA: Chronic atrial fibrillation does not further decrease  $K^+$  currents of paced canine right atrial cells. It increases them. *Circulation* 104:II-109, 2001.
238. Protas L, Alcott SA, Obreztkhikova M, Hu D, Rosen MR, Robinson RB, Steinberg SF: Evidence for impaired calcium handling in German shepherd dogs with inherited lethal arrhythmias. *Circulation* 104:II-110, 2001.
239. Plotnikov AN, Gainullin RZ, Yu H, Chandra P, Feinmark SJ, Cohen IS, Danilo P Jr, Rosen MR: Cardiac memory depends on a Ca-modulated pathway involving  $I_{Ca,L}$ . *Circulation* 104:II-110, 2001.
240. Sosunov EA, Anyukhovskiy EP, Danilo P Jr, Rosen MR: Heterogeneous effects of acetylcholine on maximum diastolic potential and repolarization create a substrate for arrhythmia in canine atrium. *Circulation* 104:II-276, 2001.
241. Pham TV, Sosunov EA, Anyukhovskiy EP, Danilo P, Rosen MR:  $5\alpha$ -dihydrotestosterone protects females against drug-induced arrhythmia. *Circulation* 104:II-700, 2001.
242. Patberg KW, Ferdman DJ, Quamina A, Danilo P Jr, Sun LS, Rosen MR: Pacing induces phosphorylation of the cAMP response element binding protein (CREB) and of c-Jun. *PACE* 25: 36, 2002.
243. Plotnikov AN, Gainullin RZ, Sosunov EA, Chandra P, Anyukhovskiy EP, Danilo P Jr, Rosen MR: Age-related development of transient outward current  $I_{to}$  is associated with evolution of cardiac memory. *PACE* 25:211, 2002.
244. Chandra P, Rosen TS, Herweg B, Plotnikov AN, Danilo P Jr, Rosen MR: Atrial memory: Association with atrial fibrillation. *PACE* 25:214, 2002.
245. Obreztkhikova MN, Robinson RB, Moise NS, Rosen MR: Isoproterenol induces a heterogeneous  $I_K$  response in cells from different ventricular regions in German shepherd dogs with lethal ventricular arrhythmias. *PACE* 25:233, 2002.

**Abstracts continued:**

246. Anyukhovsky EP, Sosunov EA, Chandra P, Rosen TS, Danilo P Jr, Rosen MR: Dispersion of repolarization increases in old canine atria providing a likely substrate for atrial fibrillation. PACE 25:235, 2002.
247. Obreztkhikova MN, Sosunov EA, Anyukhovsky EP, Robinson RB, Rosen MR: Age-related expression of proarrhythmia is attributable to developmental changes in  $I_{Kr}$  and  $I_{Ks}$ . Circulation 106:II-22, 2002.
248. Patberg KW, Plotnikov AN, Quamina A, Gainullin RZ, Rosen MR: Ventricular pacing-induced degradation of the cAMP response element binding protein (CREB) in the canine heart is blocked by nifedipine. Keystone Symposium: Molecular Pathology of Cardiac Arrhythmias, Santa Fe, NM, 2003, p 49.